CANpro CAN Test Tool

Version 9.0

Installation Instructions

4550 193 01741
Revision A

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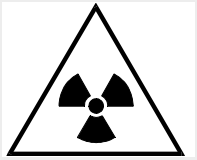
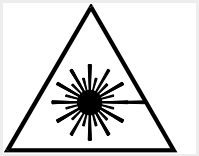
Symbol Descriptions

Attention symbol

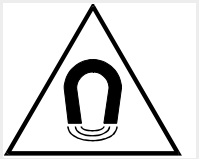


Radiation warning symbol

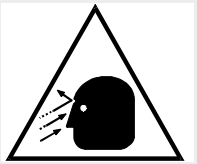


Laser warning symbol

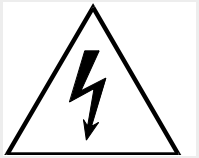
Biohazard warning symbol



Magnetism warning symbol



Projectile warning symbol



Electrical warning symbol

Revision History

ECO #	Revision	Date	Comments
E20040045	A	May 2004	New Release

This document was prepared by the CT PMG Haifa Service Innovation Department.
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Safety Information

To the User of This Manual

The user of this manual is directed to read and carefully review the instructions, warnings and cautions contained herein prior to beginning installation or service activities. While you may have previously installed or serviced equipment similar to that described in this manual, changes in design, manufacture or procedure may have occurred which significantly affect the present installation or service.

Installation and Environment

Except for installations requiring certification by the manufacturer per federal standards, see that a radiation protection survey is made by a qualified expert in accordance with NCRP 102, section 7, as revised or replaced in the future. Perform a survey after every change in equipment, workload, or operating conditions which might significantly increase the probability of persons receiving more than the maximum permissible dose equivalent.

Diagnostic Imaging Systems - Mechanical-electrical Warning

All of the moveable assemblies and parts of this equipment should be operated with care and routinely inspected in accordance with the manufacturer's recommendations contained in the equipment manuals.
Only properly trained and qualified personnel should be permitted access to any internal parts. Live electrical terminals are deadly; be sure line disconnects are opened and other appropriate precautions are taken before opening access doors, removing enclosure panels, or attaching accessories.
Do not under any circumstances, remove the flexible high tension cables from the x-ray tube housing or high tension generator and/or the access covers from the generator until the main and auxiliary power supplies have been disconnected. Failure to comply with the above may result in serious or fatal bodily injuries to the operator or those in the area.

Electrical-grounding Instructions

The equipment must be grounded to an earth ground by a separate conductor. The neutral side of the line is not to be considered the earth ground. On equipment provided with a line cord, the equipment must be connected to properly grounded, three-pin receptacle. Do not use a three-to-two pin adapter.

Diagnostic Imaging Systems - Radiation Warning

X-ray and Gamma-rays are dangerous to both operator and others in the vicinity unless established safe exposure procedures are strictly observed.
The useful and scattered beams can produce serious or fatal bodily injuries to any persons in the surrounding area if used by an unskilled operator. Adequate precautions must always be taken to avoid exposure to the useful beam, as well as to leakage radiation from within the source housing or to scattered radiation resulting from the passage of radiation through matter.
Those authorized to operate, participate in or supervise the operation of the equipment must be thoroughly familiar and comply completely with the current established safe exposure factors and procedures described in publications, such as: Subchapter J of Title 21 of the Code of Federal Regulations, "Diagnostic X-ray Systems and Their Major Components", and the national council on radiation protection (NCRP) no. 102, "Medical X-ray And Gamma-ray Protection For Energies Up To 10 Mev-equipment Design and Use", as revised or replaced in the future.
Those responsible for planning of x-ray and gamma-ray equipment installations must be thoroughly familiar and comply completely with NCRP no. 49, "Structural Shielding Design and Evaluation For Medical Of X-rays and Gamma-rays of Energies Up to 10 Mev", as revised and replaced in the future. Failure to observe these warnings may cause serious or fatal bodily injuries to the operator or those in the area.
Add additional safety information as needed

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CANpro Version 9.0 Installation Instructions

Introduction

CANpro CAN Test Tool Software can be installed on any laptop (notebook) or desktop PC to perform a variety of tasks necessary to maintain an Mx8000 or Mx8000 IDT/Brilliance Scanner running at optimum performance. After you have completed all sections of this instruction, the CANpro Test Tool software will be installed on your PC and will be able to communicate with the scanner's host computer and monitor the scanner's CAN bus.

This installation instruction guides the user through the following separate procedures:

1 Pre-setup Installation

1 Removal procedure for previous versions of CANpro

2 Installation procedure for CANpro CAN Test Tool software

3 Installation procedure for the Peak-CAN device driver

4 Ethernet Setup

5 Network Verification

6 First-time operation of CANpro CAN Test Tool Software

7 Updating CANpro to a new version

8 Getting Started

Prerequisites

- The Mx8000 CT Scanner must have version 2.2 Software or higher and the CD-ROM update CANpro 9.0 for Mx8000 system.
- Mx8000 IDT/Brilliance must have V3.1/V1.1 or higher
- A laptop or desktop PC with the following minimum requirements:
  - Windows NT 4.0, Windows 98, Windows 2000, Windows Millennium (ME), or Windows XP
  - 200 MHz Pentium II (or compatible)
  - 50 MB free disk space
  - 64 MB RAM
  - 125 MB paging file size
- CAN communication card or PEAK CAN dongle supported by CANpro
- Security dongle or K2000 security software enabled and running on the CANpro PC
- Any version of CANpro older than version 9.0 must be completely uninstalled from the PC.

Parts Required

CANpro Version 9.0 CD-ROM

Important Notes

- It is undesirable for the hard disk or the monitor to switch off while running any tests. Power Management must be removed (i.e uninstalled) from any PC running Windows 98, Windows 2000 or Windows ME on which CANpro CAN Test Tool software is to be installed. Conflicts between power management and the PEAK CAN device driver prevent CANpro CAN Test Tool Software from operating correctly.
  - **Windows 98:** Power Management is based on a driver that runs continuously in the background. This driver can cause the CPU to run more slowly which, in turn, causes the PEAK CAN driver to execute more slowly. If the CPU is running slow or is changing state at a time when the PEAK CAN dongle receives many CAN messages in a short space of time, the machine cannot keep pace with every interruption and fetch a message from the hardware register before another arrives. This condition is known as hardware overrun.
  - **Windows 2000:** The operating system forces some hardware interrupt requests (IRQs) to serve multiple device drivers due to serious bugs in Windows 2000 advanced power management. The PEAK CAN device driver requires an unshared IRQ. When you attempt to define the CAN hardware using a “shared” IRQ, the computer displays a blue screen, reboots and the CAN hardware remains undefined.
- You must have administrator privileges on the installation PC to correctly install the security dongle software.
- Uninstall any version of CANpro before you install CANpro CAN Test Tool software V9.0.

CAUTION **Never install or remove a CAN dongle from a windows system that is up and running!**

- The security dongle is static-sensitive and should be carried in a static-protective bag.
- The Peak CAN Parallel to Serial Adapter Dongle (P/N T99Q-1003) and Security Dongle (P/N T99Q-1004) used with previous versions of CANpro can be used with CANpro CAN Test Tool S/W.
- The Security dongle is unnecessary if the following two conditions are met:
  - K2000 decryption software is installed on the PC and enabled with an unexpired Visa.
  - The registry is updated with the authorized application list (authlist) that includes CANpro.exe
- The authlist registry entries for K2000 are updated every time the ServiceNet K2 Visa Renewal Client is successfully executed. Visas are renewed for a 10-day period by the ServiceNet K2 Visa Renewal Client when there is less than 5 days remaining on the Visa. Extended Visa validity may be obtained from a K2000 Visa Administrator for special business needs.

Pre-Setup Installation

Windows 98 Systems

Power Option Setup

1 Turn on the PC and enter the BIOS/CMOS Setup.

2 Record the default hardware address and IRQ assigned to the parallel port intended for use with the PEAK CAN dongle. Use these settings at the point in the installation where hardware for the PEAK CAN device driver is defined. The following settings are recommended:

- I/O Address: 0378
- Interrupt: 07

3 Change every existing setting referring to power management from **ENABLED** to **DISABLED**.

4 Change the parallel port to EPP mode (or ECP if EPP is unavailable).

5 Choose the option to **Exit the BIOS/CMOS Setup** while saving changes and allow the PC to restart.

6 On the **Start** menu, click **Settings** and then click **Control Panel**.

7 Double-click the **Power Management** Icon (Figure 1 - 1). (Windows ME users select Power Options).

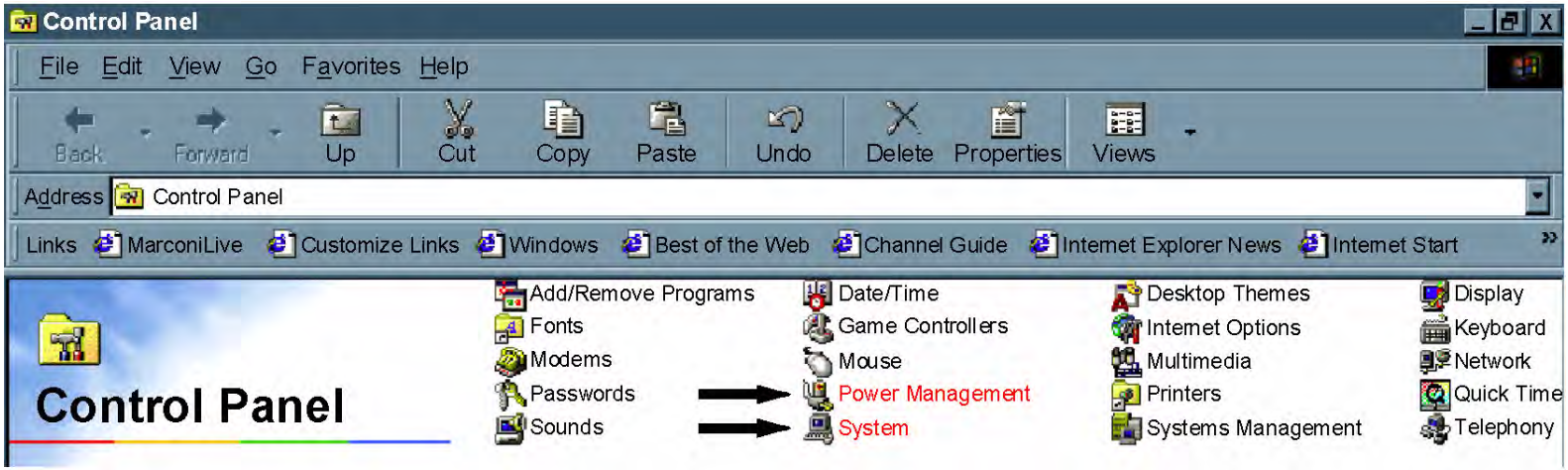


Figure 1 - 1: Windows 98 Control Panel

8 Click the Power Schemes Tab in the Power Management Properties Dialog Box.

a If not already set, select **Always On** under Power schemes

b Select **Never** for all settings in the Settings for Always On power scheme area(Figure 1 - 2). Delete all other schemes.

9 If no changes were necessary, click **Cancel** to dismiss the dialog box. Otherwise, click **Apply** and then **OK** to accept any changes and to dismiss the dialog box.

10 Double-click the **System** icon (Figure 1 - 1) to display the System Properties Dialog Box (Figure 1 - 3).

11 Click the Device Manager tab in the System Properties Dialog Box to view the list of devices (Figure 1 - 3).

12 Double-click the **System devices** icon to display the list of System devices (Figure 1 - 3). Delete the Advanced Power Management support device icon (if present).

13 If any changes were made, restart the PC for the changes to take effect. make sure that there is no Advanced Power Management support icon present.

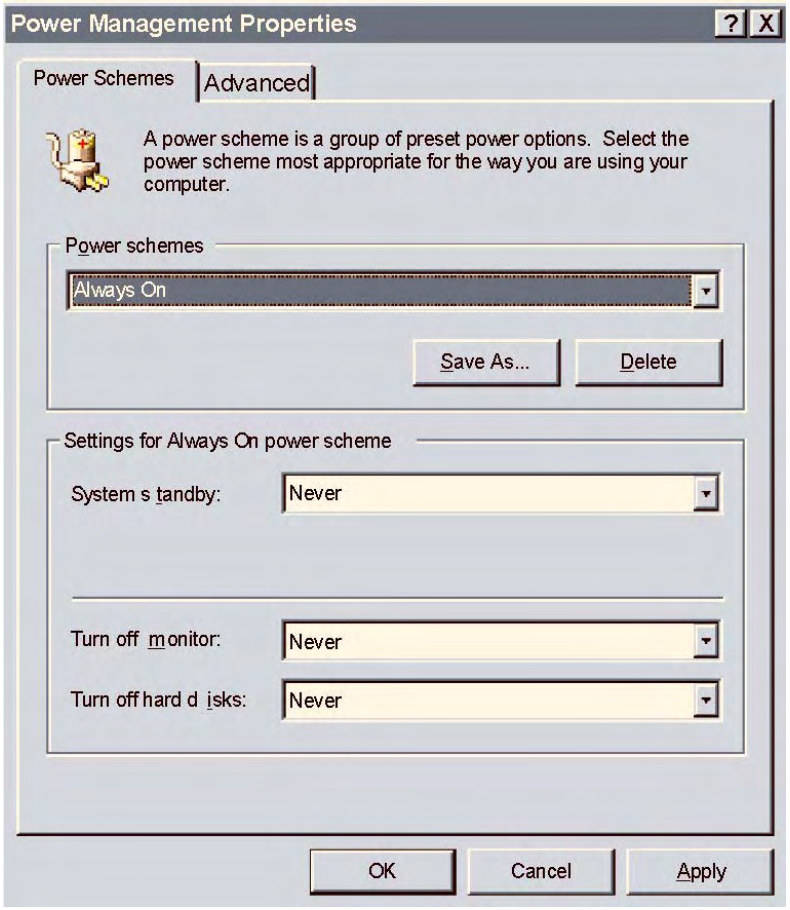


Figure 1 - 2: Power Management Properties

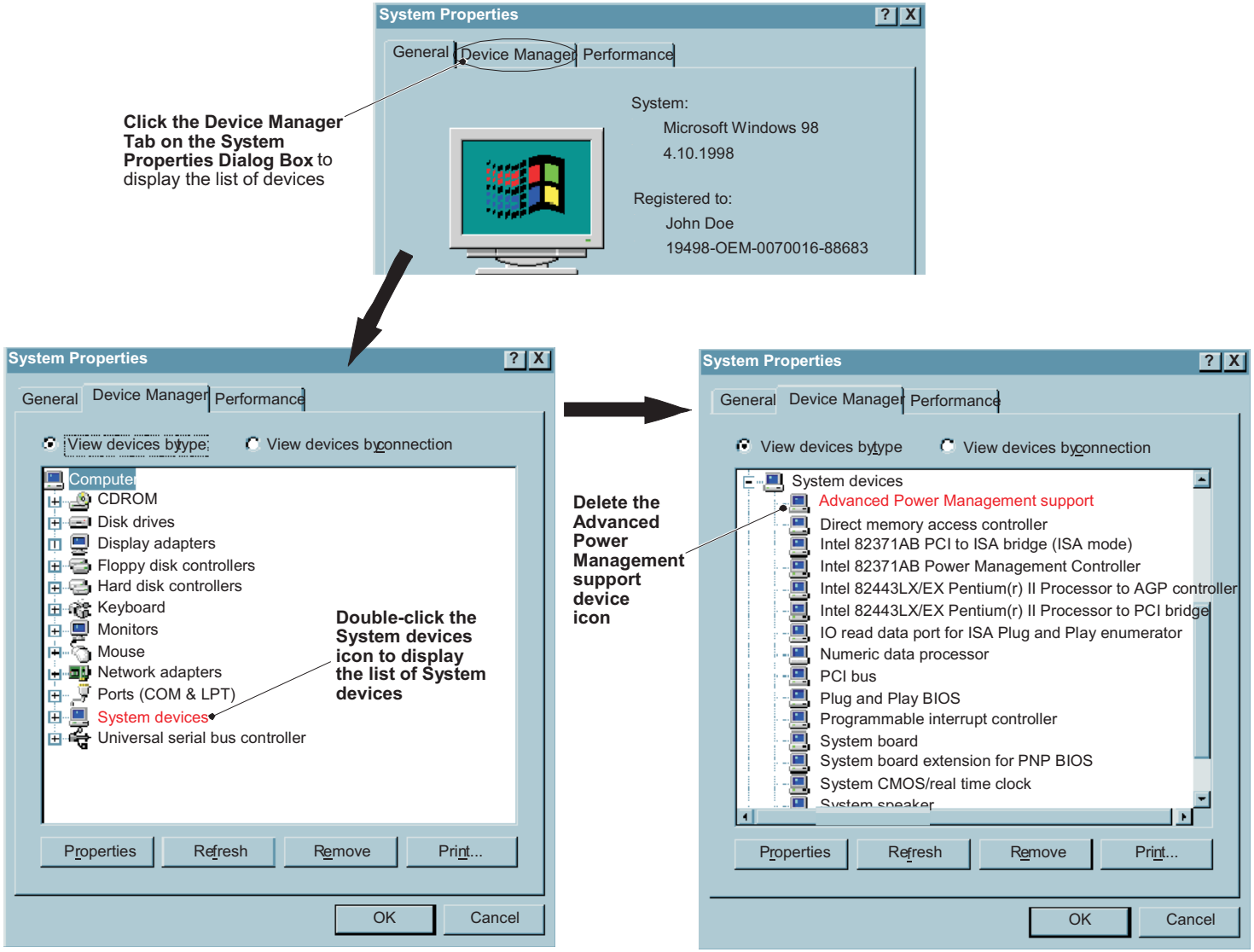


Figure 1 - 3: System Properties Windows 98

Windows 2000/XP Systems

Power Option Setup

1 Turn on the PC and enter the BIOS/CMOS Setup. These settings may differ in various computers, depending on the BIOS version and CPU.

2 Change the setting (if possible) of any unused IRQ intended for use with the PEAK CAN dongle from **AVAILABLE** to **RESERVED**. Use this IRQ at the point in the installation where hardware for the PEAK CAN device driver is defined. If no conflict exists, the following settings are recommended:

- I/O Address: 0378
- Interrupt: 07

3 Change all power management settings from **ENABLED** to **DISABLED**.

4 Change the parallel port to EPP mode (or ECP if EPP is unavailable).

5 Save changes and exit the BIOS/CMOS Setup while allowing the PC to restart.

6 On the **Start** menu, click **Settings** and then click **Control Panel**.

7 Double-click the Power Options icon (Figure 1 - 4).

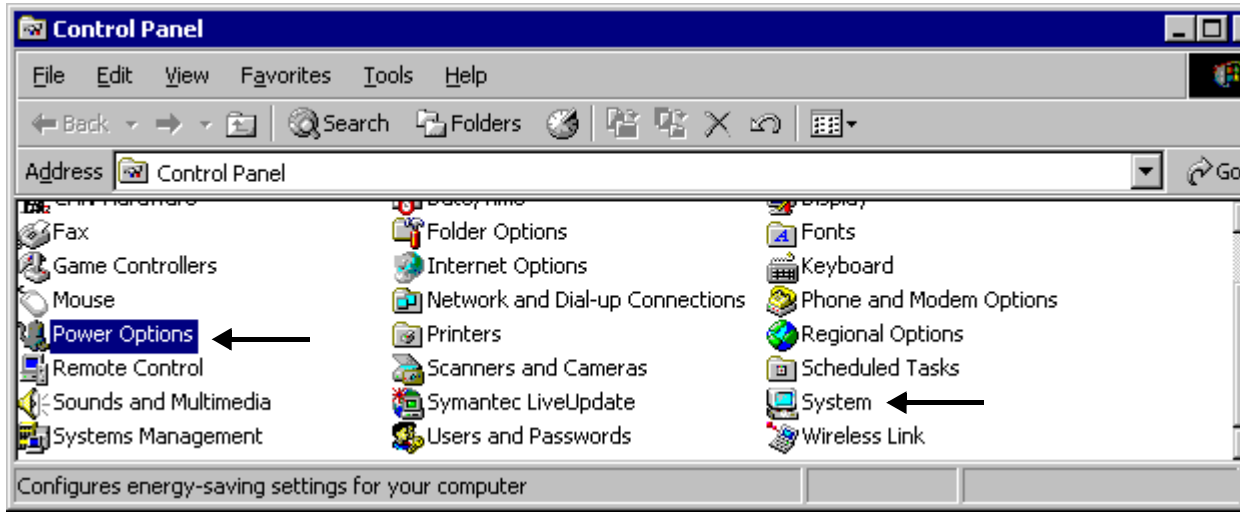


Figure 1 - 4: Windows Control Panel

8 Click the Power Schemes tab on the Power Options Properties dialog box (see Figure 1 - 5). In the Setting for Portable/Laptop power scheme area, select **Never** for all settings under **Plugged in**. Do not run the CANpro with batteries as a power source.

9 If no changes are necessary, click **Cancel** to close the dialog box. Otherwise, click **Apply** and then **OK** to accept any changes and to close the dialog box.

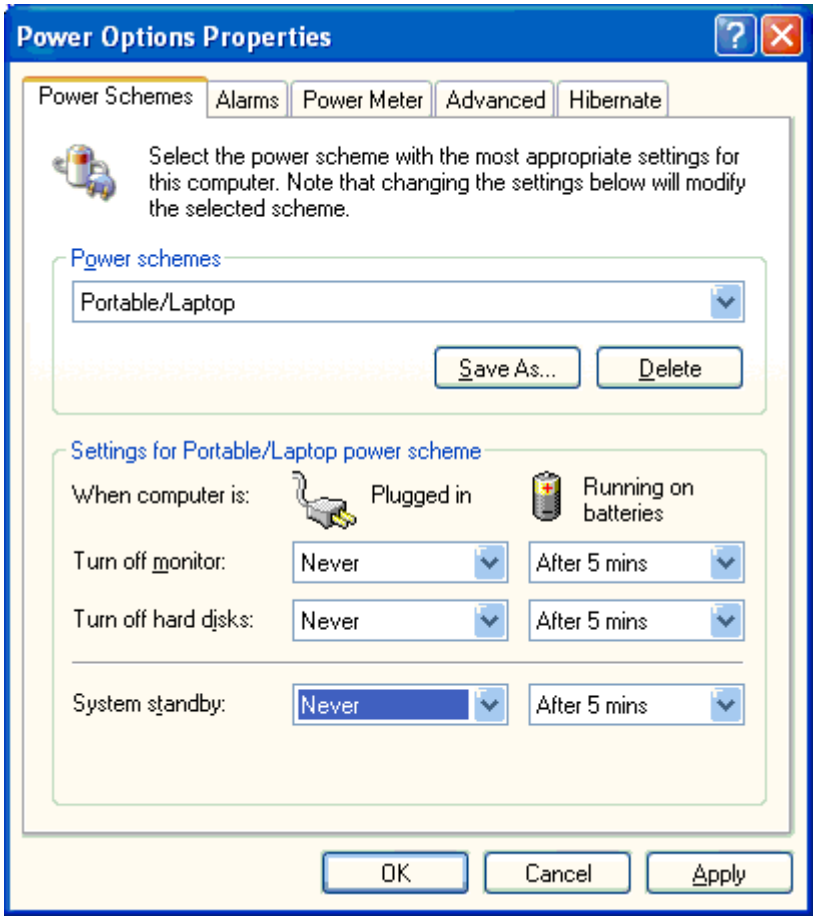


Figure 1 - 5: Power Options Properties

Port Settings for Parallel Peak CAN Dongle

1 In the **Control Panel**, double click the **System** icon (Figure 1 - 4) to display the System Properties Dialog box (Figure 1 - 6).

2 Select the **Hardware** tab of the System Properties dialog box and click **Device Manager** to view the list of devices (Figure 1 - 6).

3 Double click the Printer port (LPT1) icon (Figure 1 - 7) to open the Printer Port Properties dialog box.

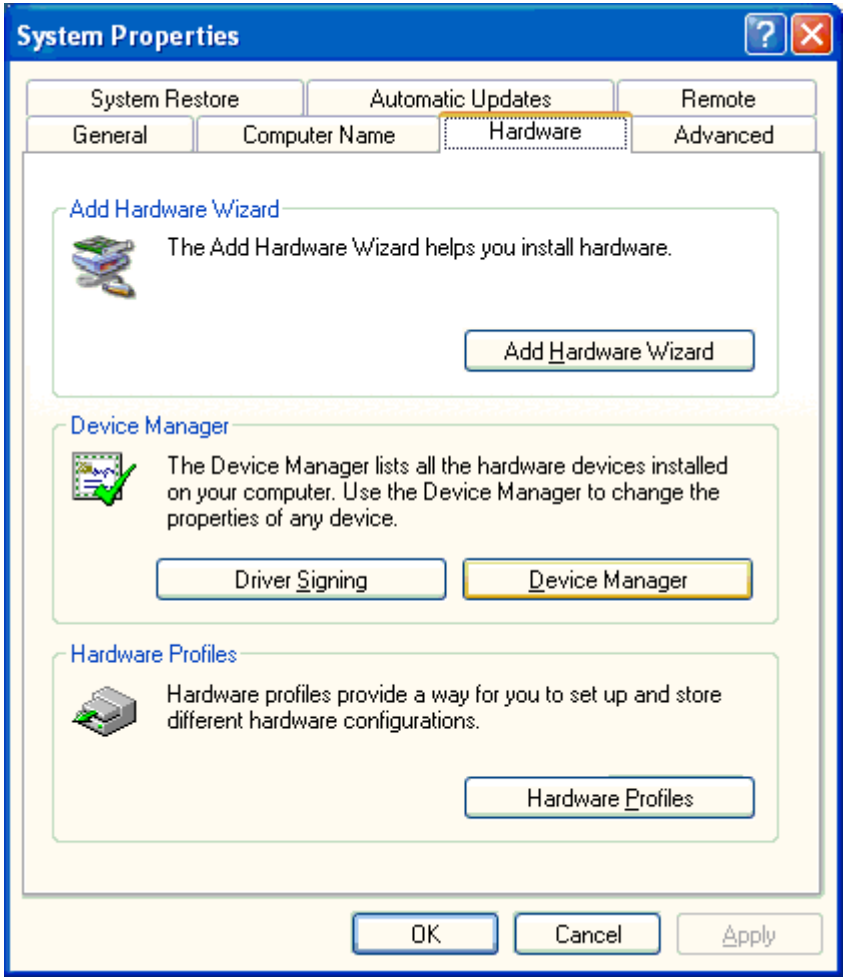


Figure 1 - 6: System Properties

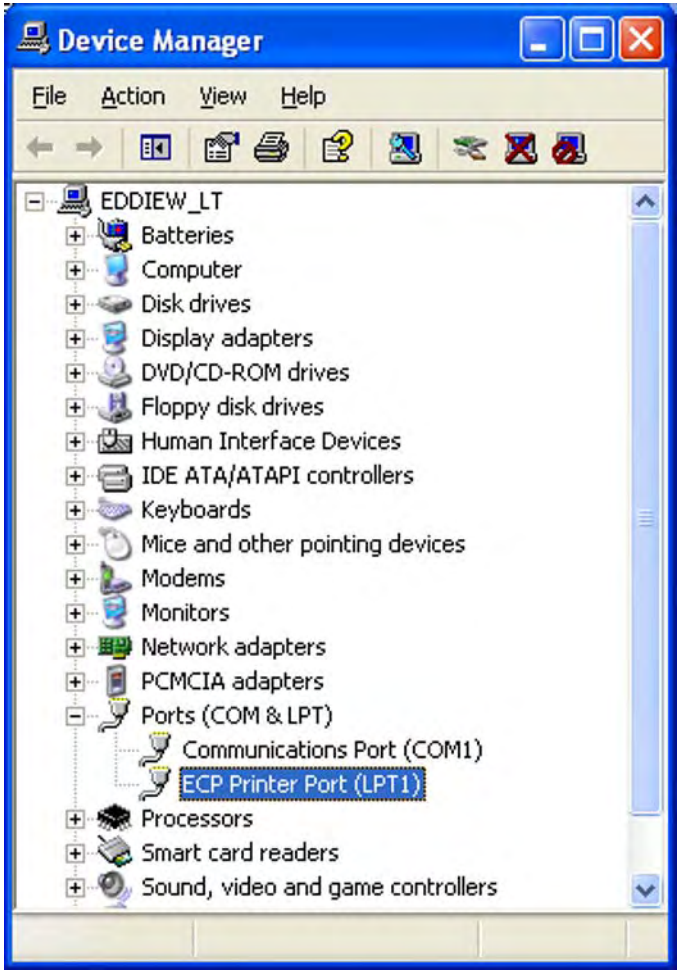


Figure 1 - 7: Device Manager Window

4 In the Port Settings tab (see Figure 1 - 8), click **Use any interrupt assigned to the port**.

5 In the Resources tab, verify that the current configuration is set as shown in Figure 1 - 8. If not, clear the **Use automatic settings** check box (Figure 1 - 9), to enable the **Change Setting** button.

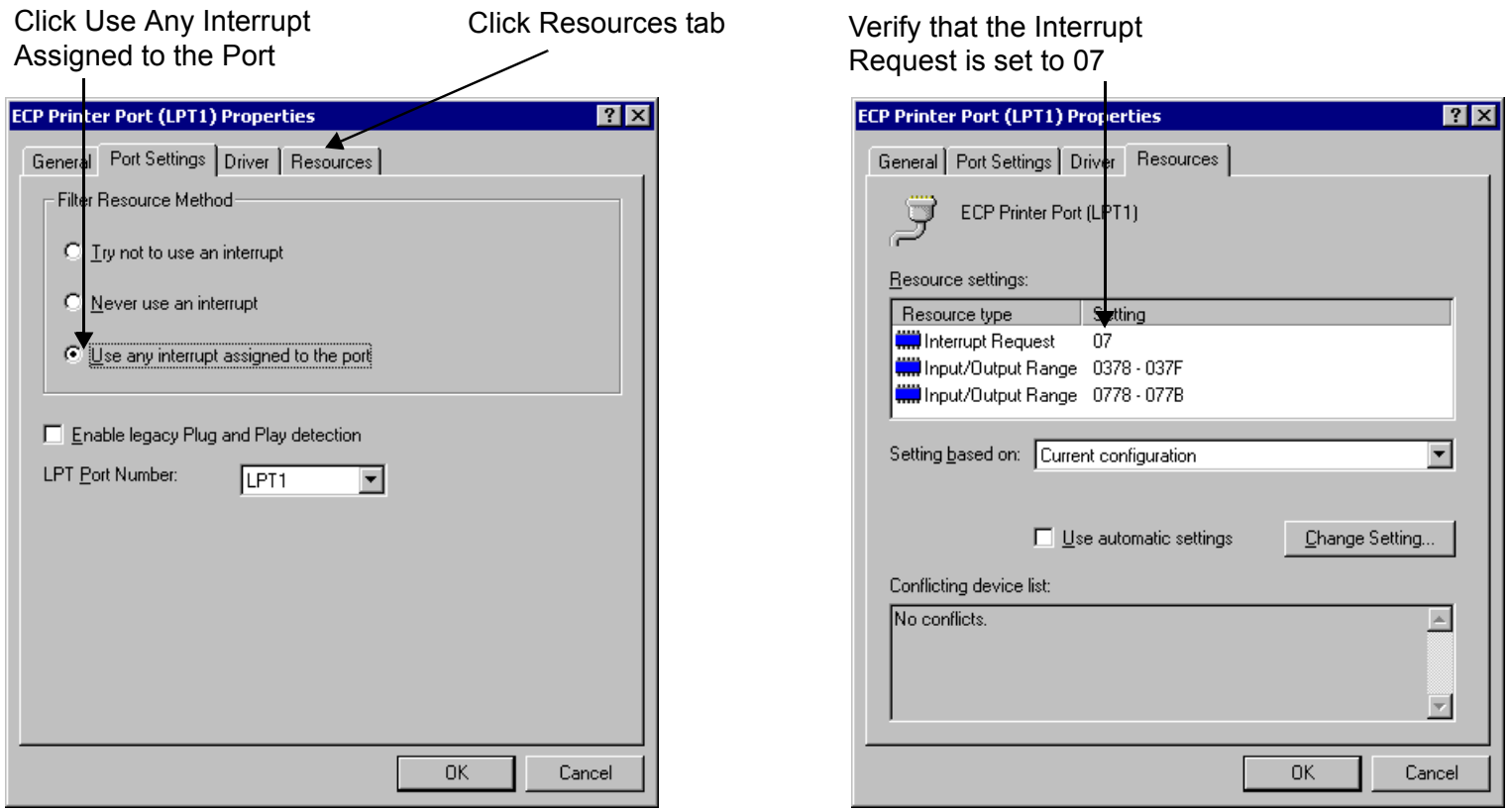


Figure 1 - 8: Printer Properties Dialog Box

6 Select a configuration that enables the selection of an Interrupt Request, and an I/O Range that complies with the requirements in Step 2 above.

7 In the Resource Settings tab, double-click the **Interrupt Request** icon. The Edit Interrupt Request dialog box appears.

8 In the Value text box, enter the value recommended in Step 2 and click **OK**.

9 In the General tab of the Printer Port Properties dialog box, verify that no conflicts are present.

10 Click **OK**, and restart the computer.

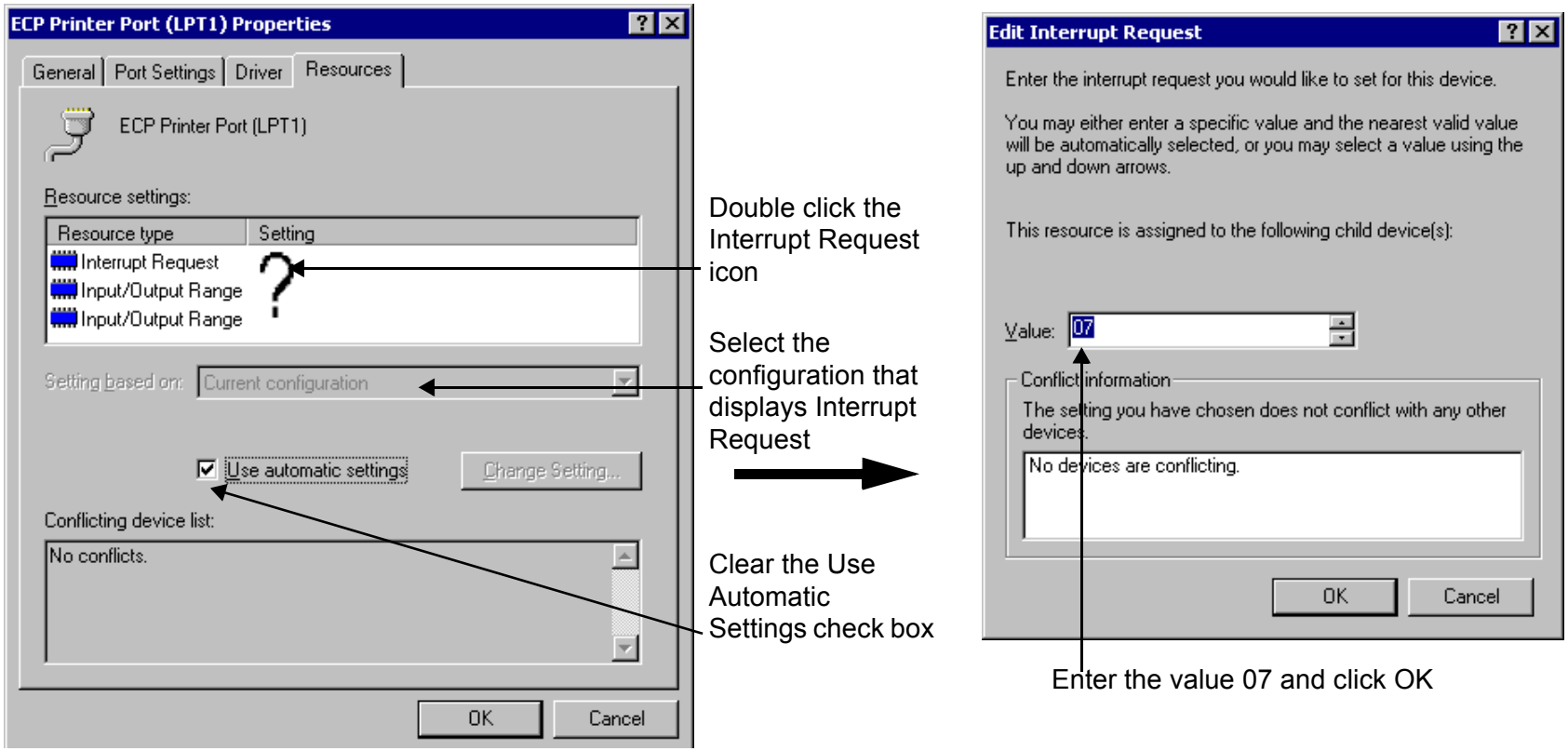

ECP Printer Port (LPT1) Properties
General
Port Settings
Driver
Resources
ECP Printer Port (LPT1)
Resource settings:
Resource type
Setting
Interrupt Request
Input/Output Range
Input/Output Range
Setting based on:
Current configuration
Use automatic settings
Change Setting...
Conflicting device list:
No conflicts.
OK
Cancel
Double click the Interrupt Request icon
Select the configuration that displays Interrupt Request
Clear the Use Automatic Settings check box
Edit Interrupt Request
Enter the interrupt request you would like to set for this device.
You may either enter a specific value and the nearest valid value will be automatically selected, or you may select a value using the up and down arrows.
This resource is assigned to the following child device(s):
Value:
07
Conflict information
The setting you have chosen does not conflict with any other devices.
No devices are conflicting.
OK
Cancel
Enter the value 07 and click OK

Figure 1 - 9: Interrupt Setup

Network Speed on Brilliance

Checking or Changing the Network Speed of the Brilliance

1. Click **Start | Settings | Network and Dial up Connections.**
2. Right-click on **Local Area Connection** and select **Properties.**
3. In the Local Area Connection Properties dialog box click **Configure**.
4. Click the **Advanced** tab (see Figure 1 - 10).
5. Highlight **Media Type**. Auto Select is the default. You can force the scanner to use a fixed speed, i.e. 100 Mbps Full – Duplex by highlighting the new speed.

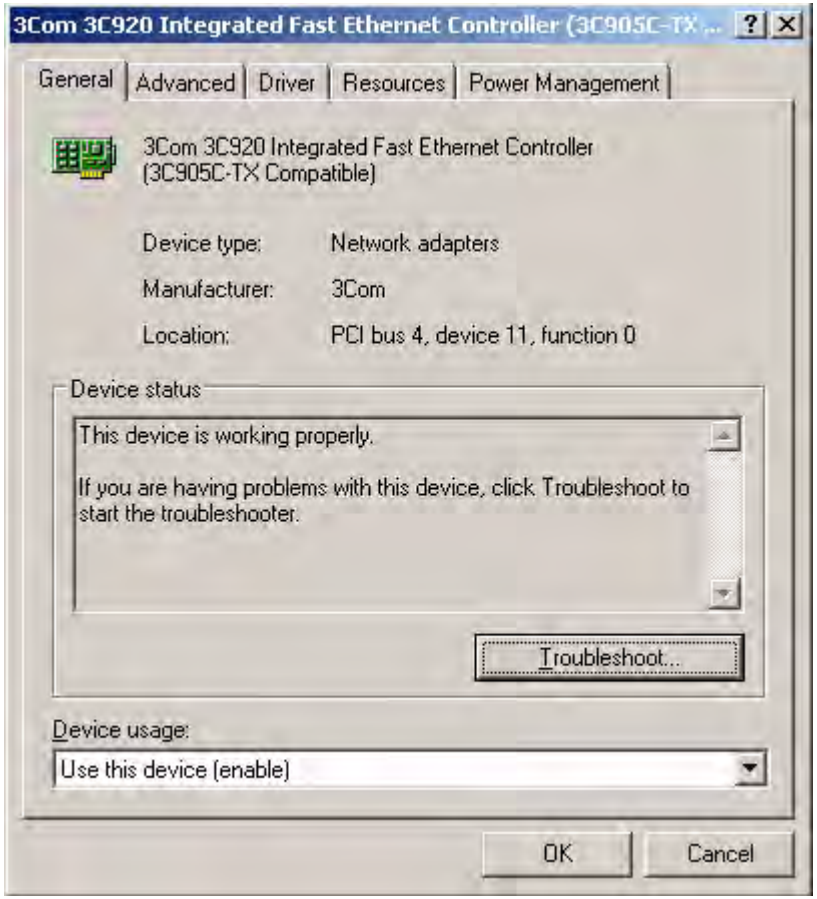


Figure 1 - 10:

6 Click **OK** (see Figure 1 - 11).

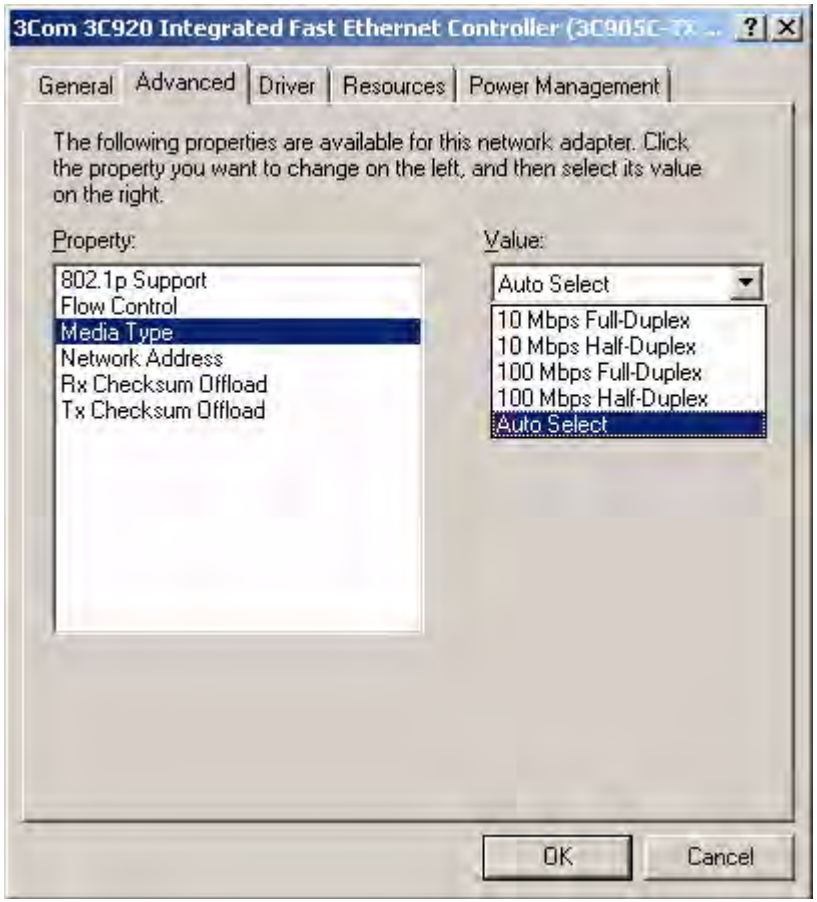


Figure 1 - 11:

Installing CANpro Can Test Tool Software

The following steps are required to install CANpro Test tool on a PC. They are:

1 Removal of any previous versions of CANpro

2 Installation of CANpro, its device drivers and a machine description

3 Definition of hardware for the CAN driver

Removing a Previous Version of CANpro

NOTE **Before installing CANpro V9 you must remove any previous version. Follow the procedure in this section.**
For systems with CANpro 4.8, refer to (see 'Uninstalling CANpro Secure 4.8 Diagnostic Software on page D-1).

Removal of a previous CANpro version is a two-step procedure:

- Using Windows Add or Remove Programs
- Using CANpro Cleaner

Add or Remove Programs

1 Click **Start | Settings | Control Panel** and double-click **Add or Remove Programs**.

2 In Add Remove Programs dialog, scroll down to **CANpro** and click **Change/Remove**.

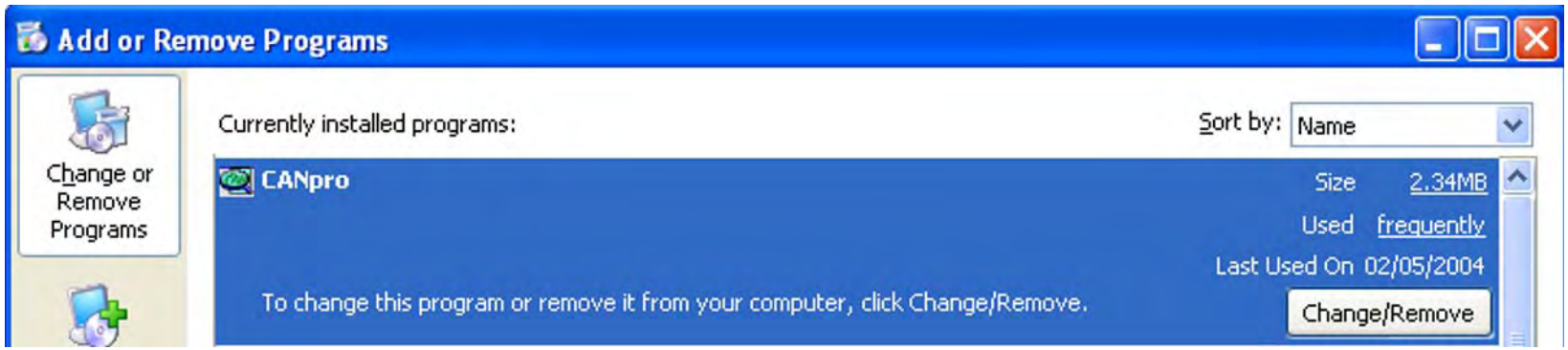


Figure 1 - 12:

A progress bar displays the program removal process (see Figure 1 - 13). Note that at the end, Windows informs you that not all the files have been removed (see Figure 1 - 14).

The remaining files are protocols and site download data recorded in the previous CANpro version. This data can only be viewed in the new CANpro version but cannot be used for connecting with those sites.

It is recommended to delete all the directories listed in the Details window.

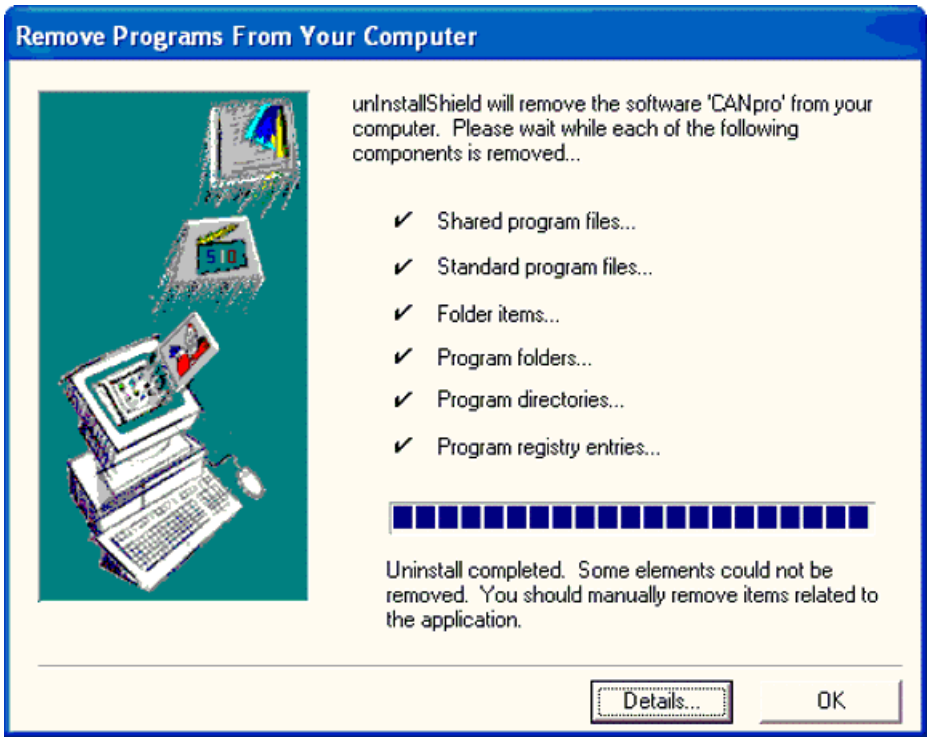

Remove Programs From Your Computer
unInstallShield will remove the software 'CANpro' from your computer. Please wait while each of the following components is removed...
Shared program files...
Standard program files...
Folder items...
Program folders...
Program directories...
Program registry entries...
Uninstall completed. Some elements could not be removed. You should manually remove items related to the application.
Details...
OK

Figure 1 - 13:

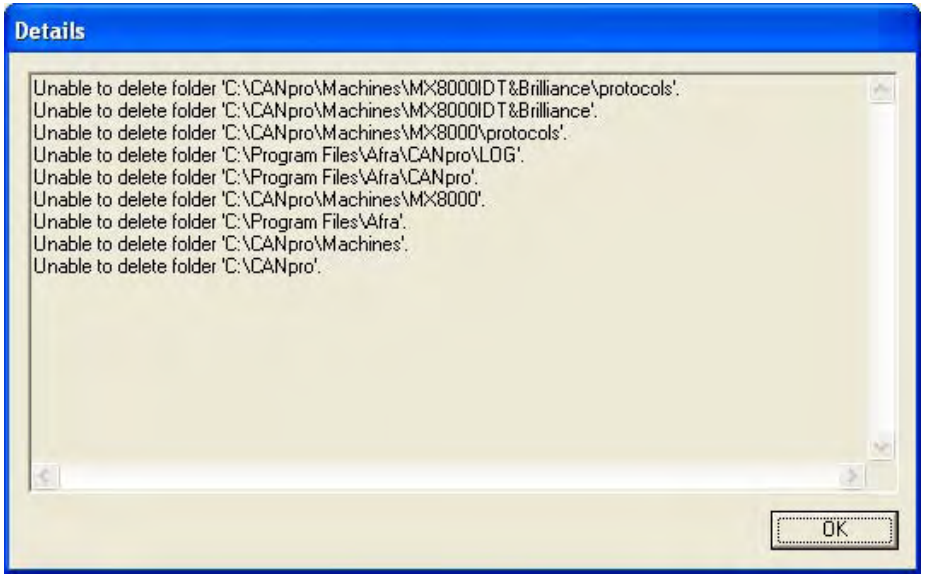

Details
Unable to delete folder 'C:\CANpro\Machines\MX8000IDT&Brilliance\protocols'.
Unable to delete folder 'C:\CANpro\Machines\MX8000IDT&Brilliance'.
Unable to delete folder 'C:\CANpro\Machines\MX8000\protocols'.
Unable to delete folder 'C:\Program Files\Afra\CANpro\LOG'.
Unable to delete folder 'C:\Program Files\Afra\CANpro'.
Unable to delete folder 'C:\CANpro\Machines\MX8000'.
Unable to delete folder 'C:\Program Files\Afra'.
Unable to delete folder 'C:\CANpro\Machines'.
Unable to delete folder 'C:\CANpro'.
OK

Figure 1 - 14:

CANpro Cleaner

1 In **Windows Explorer**, open **CD-ROM:\Tools\CANproCleaner** and double-click **CANproCleaner.exe**.

NOTE **If a user profile for more than one user exists on the PC, every user with a profile that invokes CANpro must run CanproCleaner.exe to remove all registry entries for CANpro.**

2 Restart the PC. Enter Setup during the PC's boot process to prepare for the next step.

Install CANpro, Device Drivers, and Machine Description

1. Close all applications.
2. Insert the **CANpro Version 9.0** CD-ROM into the CD-ROM drive. Setup starts automatically.
3. Click **Next** after the Welcome dialog box is displayed (see Figure 1 - 15).
4. Click **Next** after the Information dialog box is displayed (Figure 1 - 16). The Information dialog box displays information about CAN hardware supported by the PEAK CAN driver and about CANpro itself.

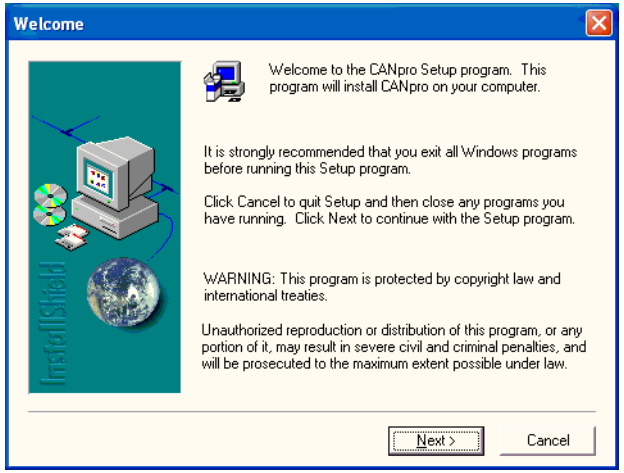

Welcome
Welcome to the CANpro Setup program. This program will install CANpro on your computer.
It is strongly recommended that you exit all Windows programs before running this Setup program.
Click Cancel to quit Setup and then close any programs you have running. Click Next to continue with the Setup program.
WARNING: This program is protected by copyright law and international treaties.
Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.
InstallShield
Next >
Cancel

Figure 1 - 15: Welcome Dialog Box

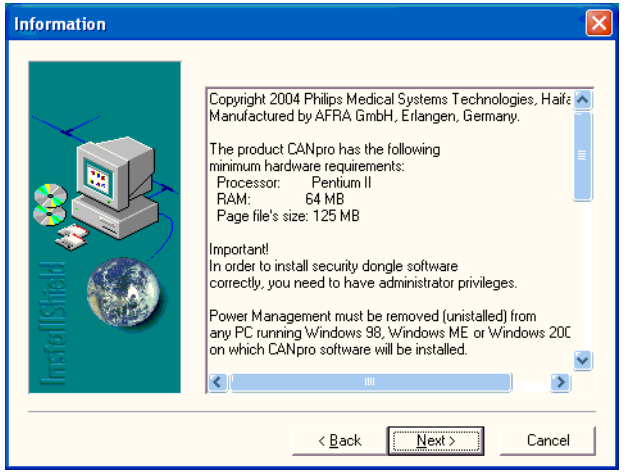

Information
Copyright 2004 Philips Medical Systems Technologies, Haifa
Manufactured by AFRA GmbH, Erlangen, Germany.
The product CANpro has the following minimum hardware requirements:
Processor: Pentium II
RAM: 64 MB
Page file's size: 125 MB
Important!
In order to install security dongle software correctly, you need to have administrator privileges.
Power Management must be removed (unistalled) from any PC running Windows 98, Windows ME or Windows 200 on which CANpro software will be installed.
InstallShield
< Back
Next >
Cancel

Figure 1 - 16: Information Dialog Box

NOTE **Double click Setup.exe in the CD's root directory with Windows Explorer if the PC's Autorun feature is disabled.**

5 Setup reads your user and company names from the registry and inserts the corresponding edit fields in the User Information dialog box (see Figure 1 - 17). The edit fields can be changed to anything you want. A dummy serial number is already displayed in the corresponding field as well.

6 Make any desired changes in the User Information dialog box and click **Next**.

7 Use the Choose Destination Location Dialog box (see Figure 1 - 18) to select the CANpro installation path. The default path is **C:\Program Files\Afra\CANpro**, which can be changed according to your needs. The Setup program informs you whether there is enough space at the given location. If not, you can return to this dialog box and change the setting.

8 Edit the path if desired and click **Next**.

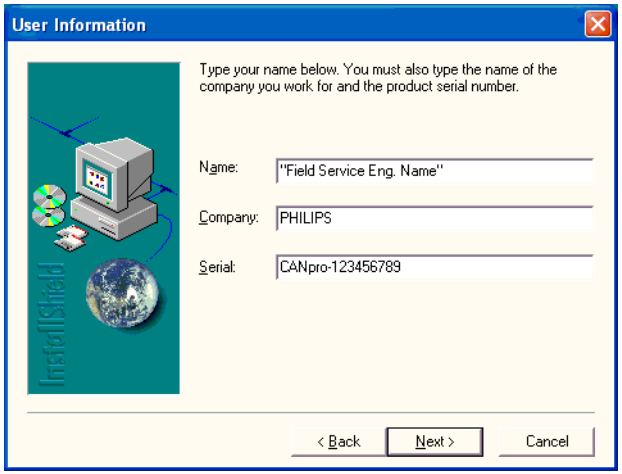


Figure 1 - 17: User Information Dialog Box

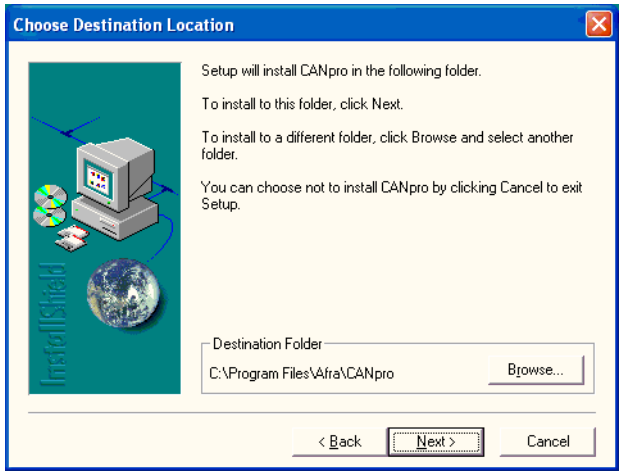

Choose Destination Location
Setup will install CANpro in the following folder.
To install to this folder, click Next.
To install to a different folder, click Browse and select another folder.
You can choose not to install CANpro by clicking Cancel to exit Setup.
Destination Folder
C:\Program Files\Afra\CANpro
Browse...
InstallShield
< Back
Next >
Cancel

Figure 1 - 18: Choose Destination Location Dialog Box

9 Use the Choose Destination Location for Machines Dialog Box (Figure 1 - 19) to select the path for the "machines" folder. The default path is **C:\CANpro\Machines** (recommended).

NOTE **Test results are also stored in the machines folder.**

10 Edit the path if desired.

11 Click **Next** to accept the path and proceed to the Select Components Dialog Box (Figure 1 - 20)

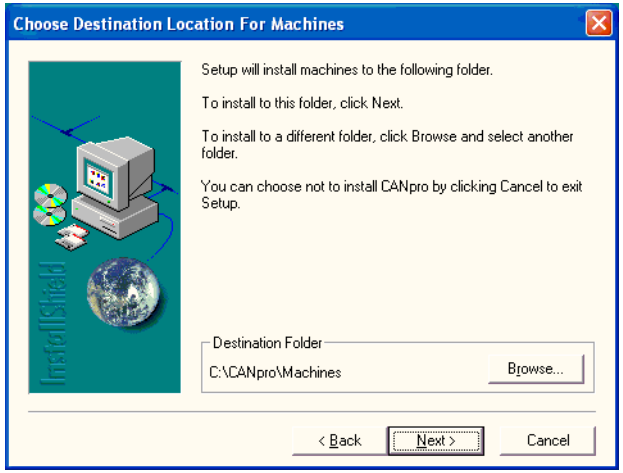

Choose Destination Location For Machines
Setup will install machines to the following folder.
To install to this folder, click Next.
To install to a different folder, click Browse and select another folder.
You can choose not to install CANpro by clicking Cancel to exit Setup.
Destination Folder
C:\CANpro\Machines
Browse...
< Back
Next >
Cancel
InstallShield

Figure 1 - 19: Path for Machine Folder Dialog Box

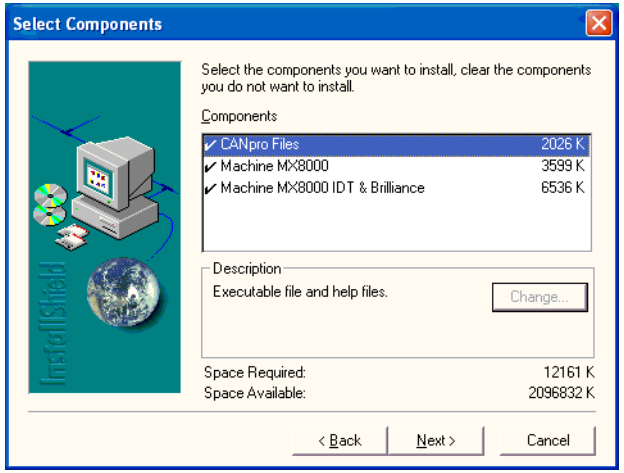


Figure 1 - 20: Select Components Dialog Box

NOTE **The Select Components dialog box is used for the initial installation of CANpro and also when updating CANpro to a newer software revision.**

12 The CANpro Files component must be checked when installing CANpro. Setup does not allow the installation to continue if this component is not selected.

13 Select the default, for all components.

14 Click **Next** to proceed to the Select Program Folder Dialog Box (Figure 1 - 21).

NOTE **The default program folder name is CANpro.**

15 Determine the program folder name that you want to appear in the start menu in the Programs list. CANpro may be added to any existing folder. Click **Next**.

NOTE **The Setup program now has all the information required to begin installing CANpro on your computer. A dialog box entitled Start Copying Files contains a short summary as shown in (Figure 1 - 22).**

16 Click **Next** to accept the settings or click **Back** if you want to make any changes.

NOTE **Having selected Next in the Start Copying Files Dialog Box (Figure 1 - 22), a progress indicator appears to graphically display files being copied to your computer (Figure 1 - 22). The Setup Complete dialog box (Figure 1 - 23) informs you that the installation was successful and that you must reboot the PC.**

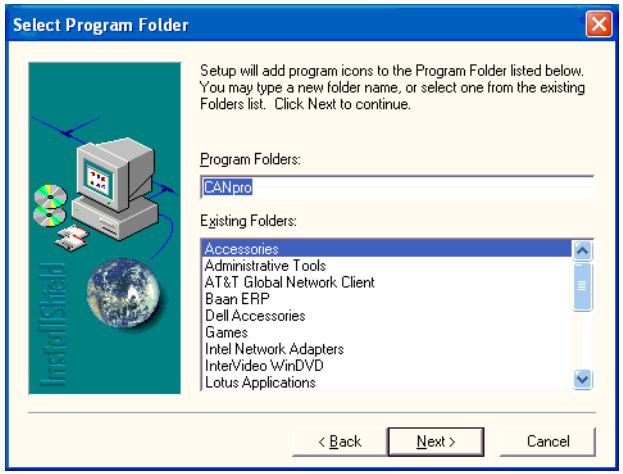


Figure 1 - 21: Select Program Files

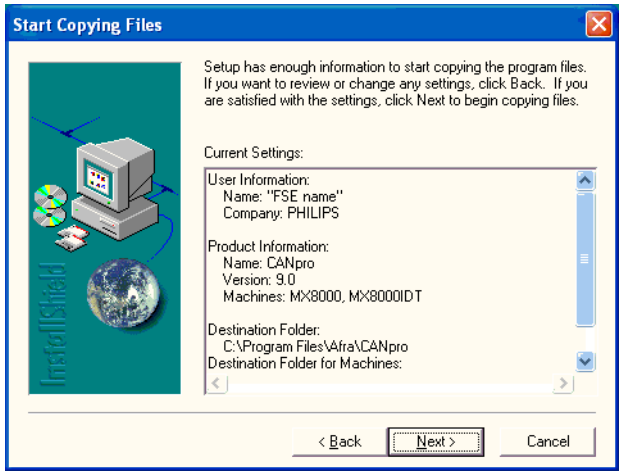

Start Copying Files
Setup has enough information to start copying the program files. If you want to review or change any settings, click Back. If you are satisfied with the settings, click Next to begin copying files.
Current Settings:
User Information:
Name: "FSE name"
Company: PHILIPS
Product Information:
Name: CANpro
Version: 9.0
Machines: MX8000, MX8000IDT
Destination Folder:
C:\Program Files\Afra\CANpro
Destination Folder for Machines:
InstallShield
< Back
Next >
Cancel

Figure 1 - 22: Start Copying Files Dialog Box

17 Check **Yes I want to restart my computer now** and click **Finish**.

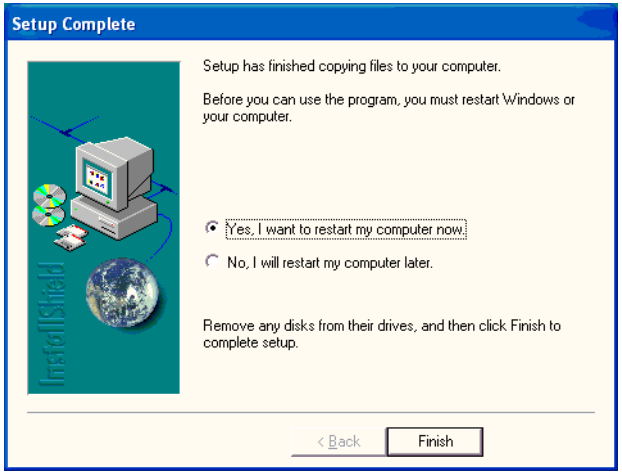

Setup Complete
Setup has finished copying files to your computer.
Before you can use the program, you must restart Windows or your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
InstallShield
< Back
Finish

Figure 1 - 23: Setup Complete Dialog Box

Define Hardware for the Peak Can Device Driver

CAUTION **Never attach or remove the Peak CAN dongle while the power is on.**

There are two types of dongle connections:

- Parallel port
- USB port

NOTE **The Peak CAN dongle (parallel or USB) is not included in the kit. Purchase the dongle separately.**

Defining the Parallel Port Peak CAN Dongle

1. Shut down the PC and attach the Peak CAN dongle to the Security dongle. Then attach the two-dongle assembly to the parallel port chosen. The security dongle is not needed with K2000 enabled.
2. Reboot the computer and after Windows is running click **Start | Settings | Control Panel**.

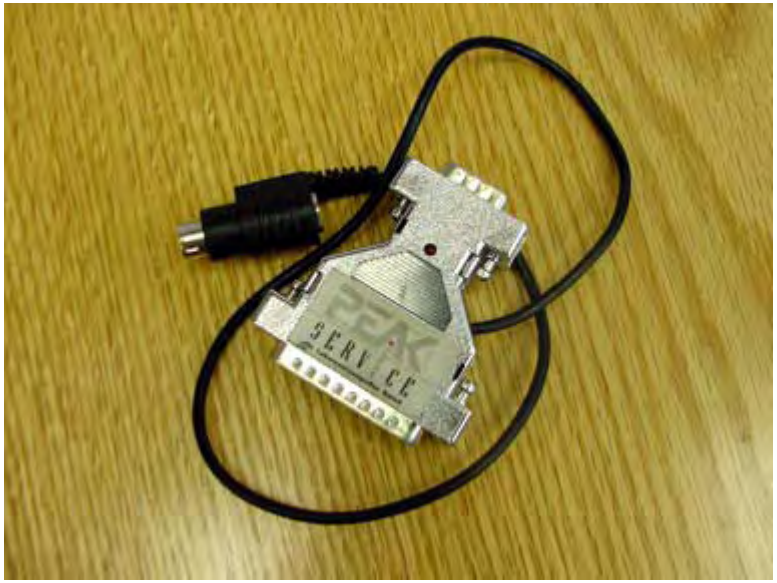


Figure 1 - 24: Parallel Port Peak CAN Dongle

3 Double-click the CAN-Hardware icon. The Properties of CAN-Hardware dialog opens (see Figure 1 - 25).

4 Click Add and in the Add CAN-Hardware dialog select the following (see Figure 1 - 26):

   a **Type of Hardware**: Peak Dongle-CAN EPP

   b **I/O-Address**: 0378

   c **Interrupt**: 7

5 Click **Apply** and **OK**.

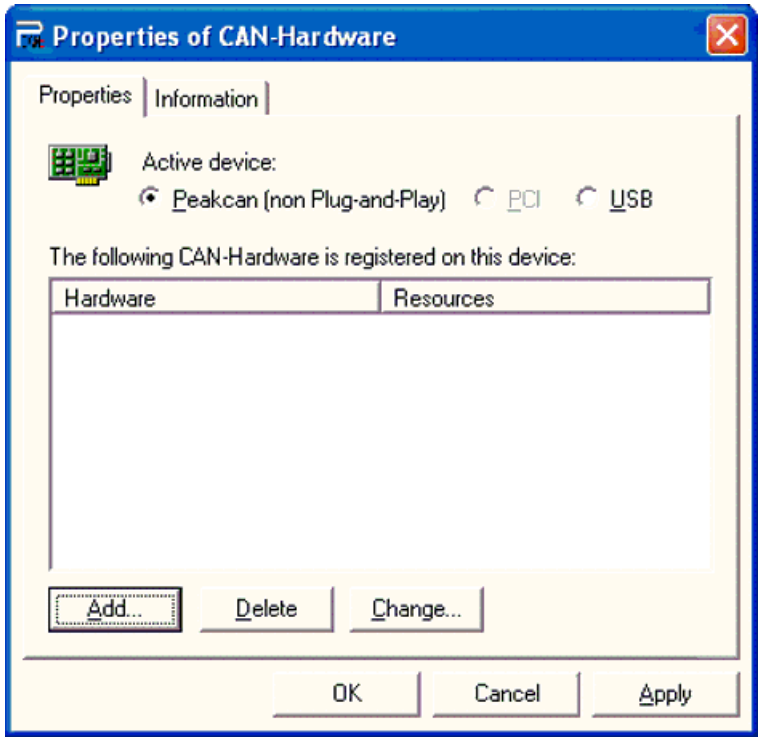


Figure 1 - 25:

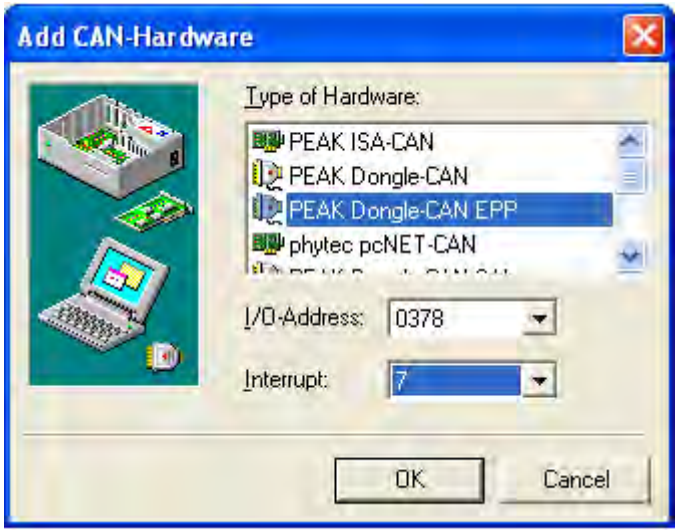


Figure 1 - 26:

Windows registers the hardware and the Properties of CAN-Hardware dialog is updated as in Figure 1 - 27. Click **Apply** and **OK**.

To see driver information click the Information tab (see Figure 1 - 28). Click **OK** to close the dialog.

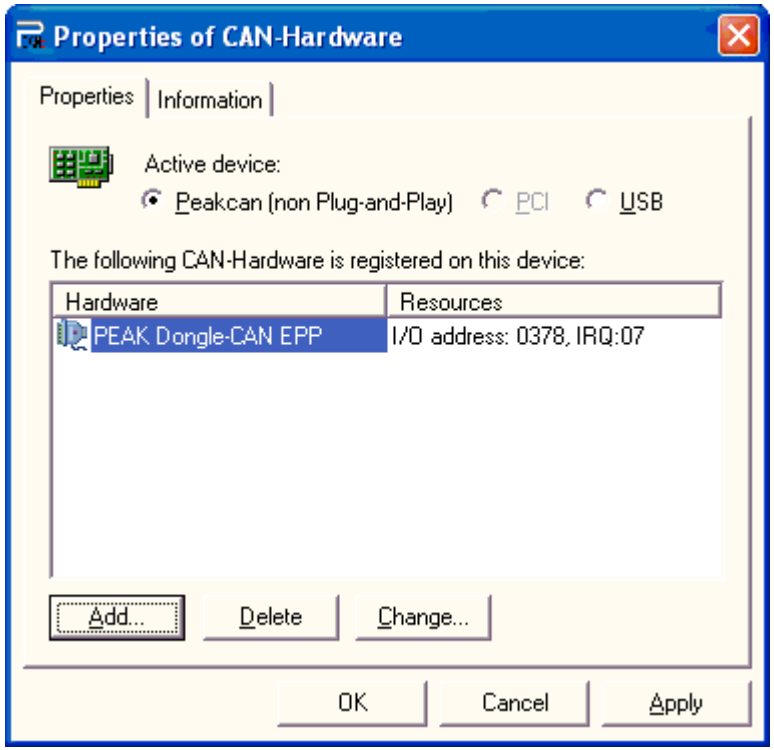


Figure 1 - 27:

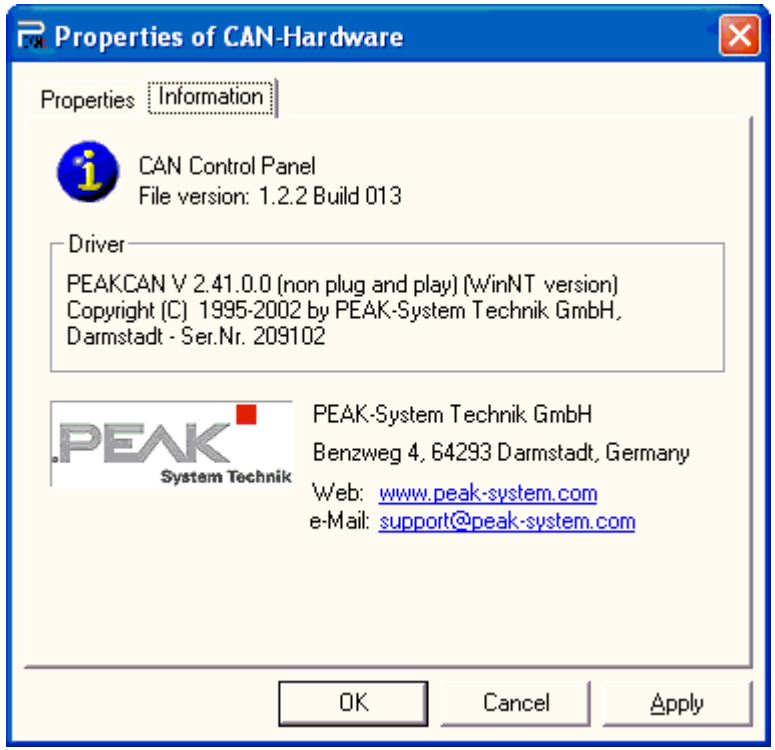


Figure 1 - 28:

NOTE **The device installed first in the Properties dialog is listed first. The first device on the list is always the DEFAULT DEVICE.**

Verifying Parallel Port Configuration on Laptop

1 Make sure Laptop power is **OFF**.

CAUTION **Damage to laptop or dongle may occur if the dongle is plugged in with power on.**

2 Install dongle, power up laptop; check to be sure Red LED on dongle is on.

3 Check to be sure Parallel Port Mode is **ECP** as follows:

a Click **Start | Programs | Accessories | System Tools | System Information.**

b In the **System Information** window (see Figure 1 - 29), click on the **+** next to **Hardware Resources**.

c Click on the **I/O Folder** and scroll down to 0x0378-0x037f. You should see ECP Printer Port (LPT1).

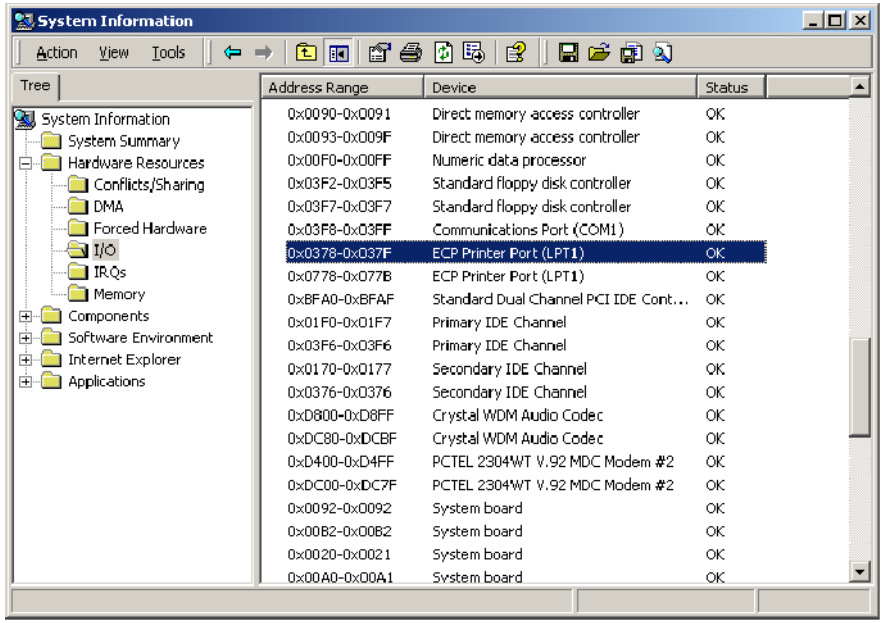


Figure 1 - 29:

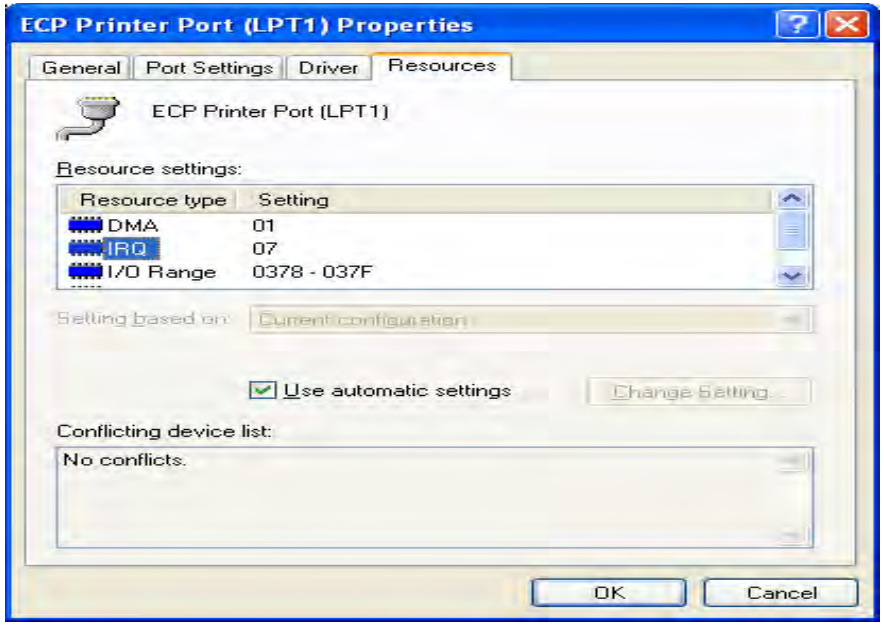


Figure 1 - 30:

If the address of the printer port (LPT1) is not correct do as follows:

1. During boot-up of Laptop press **F2** to enter BIOS Setup.
2. Press **ALT-P** to go to page 4 (laptop specific) in the BIOS Setup.
3. Highlight **Parallel Mode** and scroll with the Right arrow until **ECP** is selected.
4. Press Esc and select **Yes** to save changes.
5. Enter the **System Information** window | **Hardware Resources** again.
6. Click on IRQs. You should see Interrupt 7 and ECP Printer Port (LPT1) (see Figure 1 - 30).

Defining the USB Port Dongle

CANpro version 9.0 also supports the Peak CAN USB hardware dongle (see Figure 1 - 31). This feature will cover future laptop design that does not include a D-type 25 pin parallel port.

The Peak CAN USB dongle is connected to the USB port in the laptop (or computer) from one side and to the Gantry CAN cable on the other side by the familiar CAN connector D-type 9 pin. This interface take the VCC power directly from the USB connector and no other connections are needed.

The driver set up is done by the CAN hardware icon by selecting USB option.

Figure 1 - 31: Peak CAN USB Dongle
P/N 4550 180 00381

1 Turn on the computer and wait until the application starts up.

NOTE **With certain laptops there is a possibility of non-recognition of the USB driver upon system startup. Therefore, the system should be running before you proceed to the next step.**

2 Connect the USB PEAK CAN Dongle to a free USB port. The USB icon should appear in the system tray indicating that a USB device has been plugged in. If not, install it as follows:

a Right-click on **My Computer** and click **Properties**.

b On the **Hardware** tab, click **Device Manager** and right-click on the **USB PEAK CAN dongle** icon.

c Click **Properties**. In the **USB PEAK CAN dongle Properties** dialog select the Driver tab and click Update Driver.

d When asked for the location, search for “<WINDIR>\inf**Pcan_usb.inf**”. The USB icon should be displayed in the system tray.

Sometimes Windows cannot find the appropriate .sys file. If you are asked for its location, please specify <WINSYSDIR>\drivers**PCAN_USB.sys** (e.g. “C:\WinXP\system32\drivers**PCAN_USB.sys**”.

3 As soon as the USB icon is displayed, you must activate it in the CAN Hardware settings as follows:

4 Click **Start | Settings | Control Panel** and click on CAN-Hardware.

5 The dialog in Figure 1 - 32 appears with the USB radio option enabled (not greyed). Click on the **PEAK USB-CAN** hardware in the dialog and then click **OK**.

CANpro will now communicate using the USB dongle.

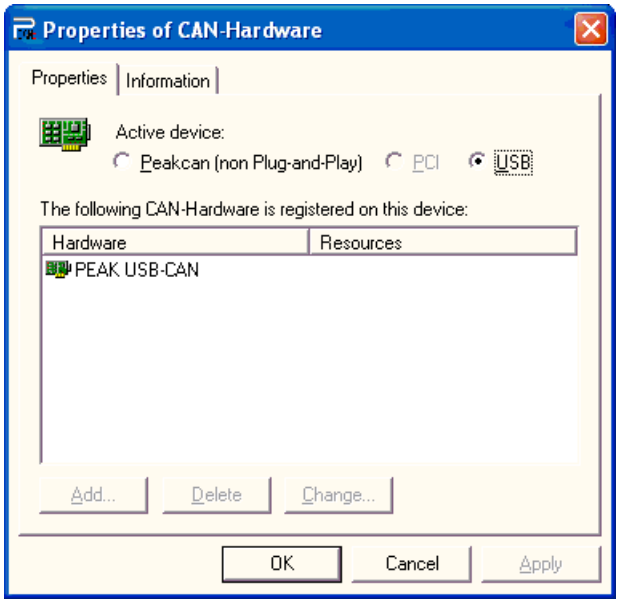


Figure 1 - 32:

You can attach both a parallel port dongle (as described above) and a USB dongle to the computer, but CANpro can work only with one of them.

To switch from one dongle to another, terminate CANpro first and then click on CAN-Hardware in the Control Panel.

Ethernet Setup

Introduction

Two physical connections must be made for the CANpro CAN Test Tool to work properly:

- Using a RS-232 cable from the scanner's MCU X5 to the Peak-CAN dongle attached to your laptop's parallel port. This connection allows monitoring of the scanner's CAN bus.
- Using an Ethernet cable (RJ-45) connected from your laptop's network card to a jack on the hospital's network. This connection allows the host computer to transfer information about the scanner to the laptop.

Changes to the laptop's network settings are required if CANpro software is to communicate with the host computer via the Ethernet connection. Since the network setup may vary from one hospital to another, it follows that there is more than one way to setup the laptop. If the network supports DHCP, you may set the laptop to obtain an IP address automatically and the procedure is complete. If the hospital does not support DHCP, or the network administrator prefers to issue fixed IP addresses, you will have to manually enter the information. The procedure for entering a fixed IP address must be performed each time you want to connect to a scanner located on a different network.

NOTE **It is recommended that you request a dedicated (fixed) IP address for the CANpro PC whether or not the hospital's network supports DHCP (automatic IP addressing). Ultimately, the hospital's network administrator will decide how you are to set up the laptop.**

NOTE **If a network is not available:**

- **Connect as a local network point-to-point with a twisted cable between the laptop and the CT machine.**
- **If an MxView workstation is present, use its IP address to connect the laptop to the CT machine. Remember to reconnect the MxView at the end of the procedure.**

The following information is required from the hospital's Network Administrator when manually entering your laptop's network setup:

- IP Address for the laptop
- Subnet Mask for the laptop
- IP address of a gateway router (necessary if the laptop is not connected to the same subnet as the scanner)

You also need the IP address of the scanner when running CANpro. When you run the program and type in a new machine description, you are asked for the scanner's IP address. The scanner's IP address only needs to be entered once.

You must create a separate description for each machine that you maintain.

Procedure

Windows 98

The procedure following Figure 1 - 33 and Figure 1 - 34 assumes your PC is on and running normally.

1. Right-click the **Network Neighborhood** icon to display the shortcut menu.
2. Click **Properties** to display the Network dialog box.
3. Select TCP/IP for the Ethernet card installed on your laptop.
4. Click **Properties** for the installed Ethernet PCMCIA card.

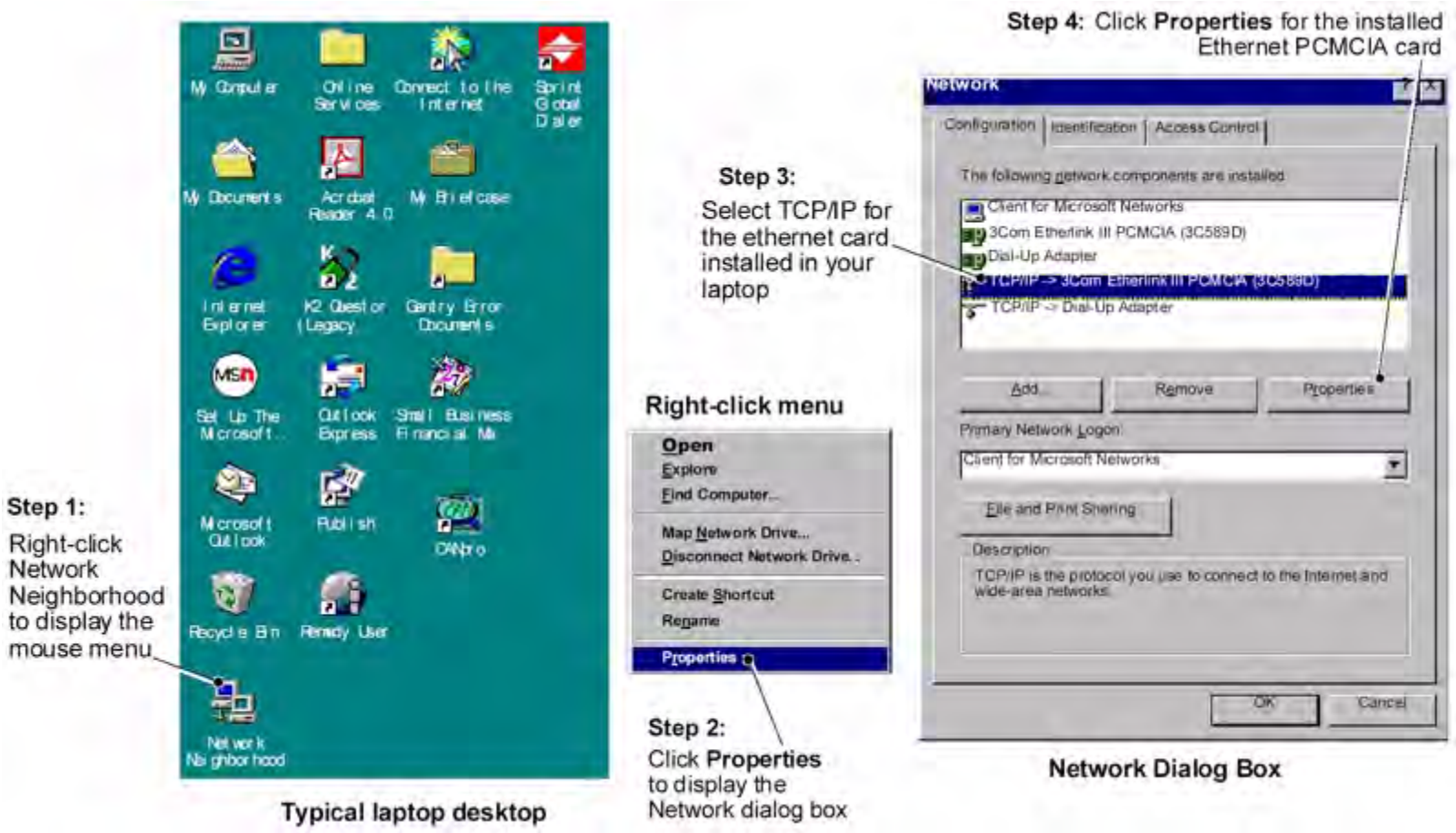


Figure 1 - 33: Network Neighborhood, Right-click Menu and Network Dialog Box

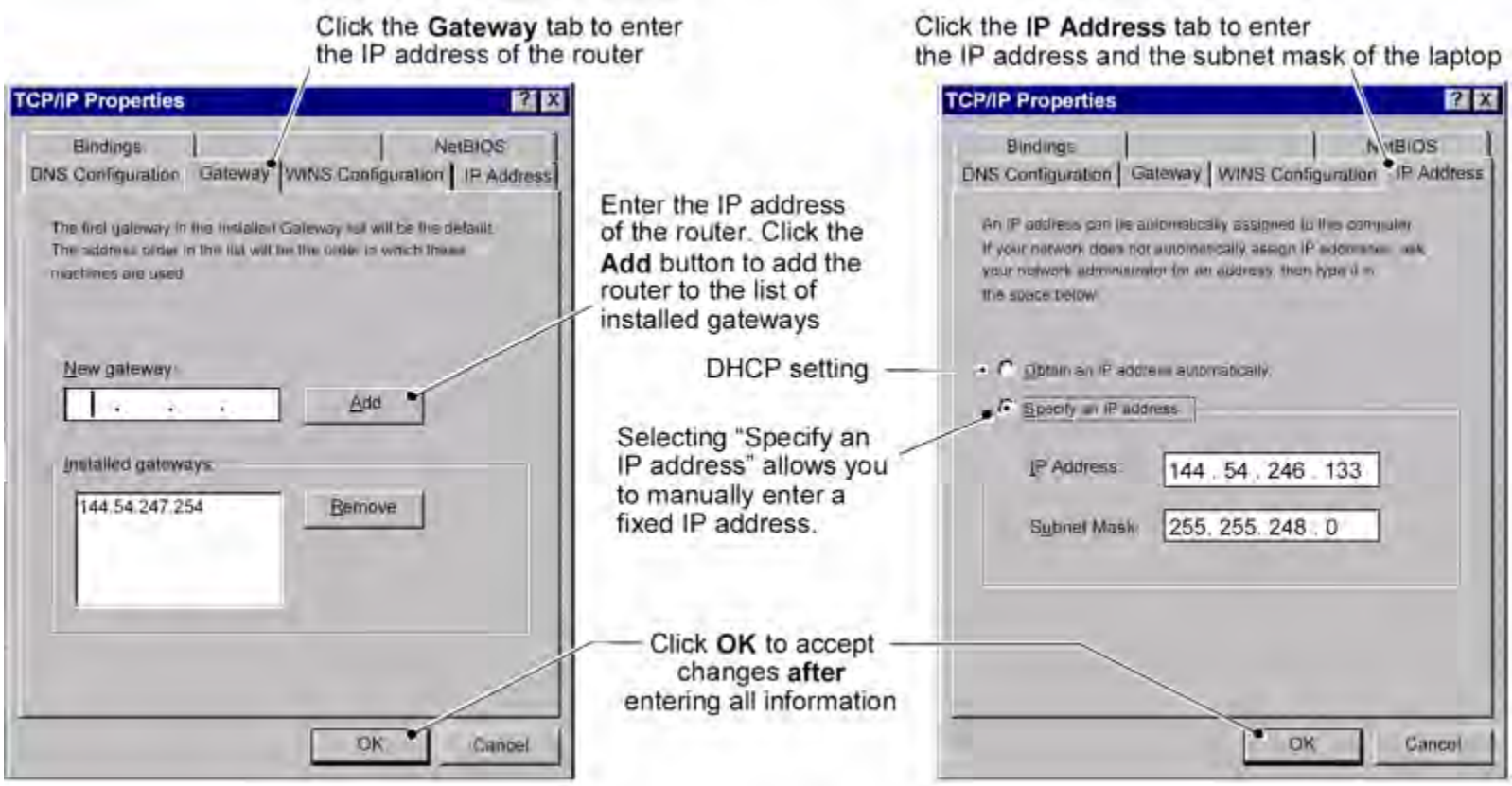

Click the Gateway tab to enter the IP address of the router
Click the IP Address tab to enter the IP address and the subnet mask of the laptop
TCP/IP Properties
Bindings
NetBIOS
DNS Configuration
Gateway
WINS Configuration
IP Address
New gateway:
Add
Installed gateways:
144.54.247.254
Remove
OK
Cancel
Enter the IP address of the router. Click the Add button to add the router to the list of installed gateways
DHCP setting
Selecting "Specify an IP address" allows you to manually enter a fixed IP address.
Click OK to accept changes after entering all information
Obtain an IP address automatically
Specify an IP address
IP Address:
144 . 54 . 246 . 133
Subnet Mask:
255. 255. 248 . 0

Figure 1 - 34: Gateway Router and Laptop IP Addresses (Windows 98)

1 In the TCP/IP Properties dialog, click the IP Address tab and select one of the following two options:

   a **Obtain an IP address automatically** – if you select this option, you simply have to reboot the PC and skip the rest of the Ethernet Setup procedure.

   b **Specify an IP address** – select this alternative to continue on with the Ethernet Setup procedure.

2 In the TCP/IP Properties dialog, click the Gateway Tab and enter the gateway router's IP address in the New gateway edit field.

3 Click **Add**. The IP address you just entered appears in the Installed gateways field.

NOTE **In most cases, update of the Gateway is not necessary.**

4 Click **OK** at the bottom of the TCP/IP Properties dialog to accept all changes and to close the window.

5 Click **OK** at the bottom of the Network window and allow the machine to restart. This completes the Ethernet Setup. Continue on to Network Verification.

Windows 2000/XP

1 Click **Start | Settings | Network Connections**.

2 Right-click on **Local Area Network** and select **Properties**.

3 Select **TCP/IP** for the ethernet card in your laptop and in the Network dialog click **Properties**.

4 Enter the IP address and Subnet Mask issued to you by the hospital's Network Administrator. Do not click **OK** yet.

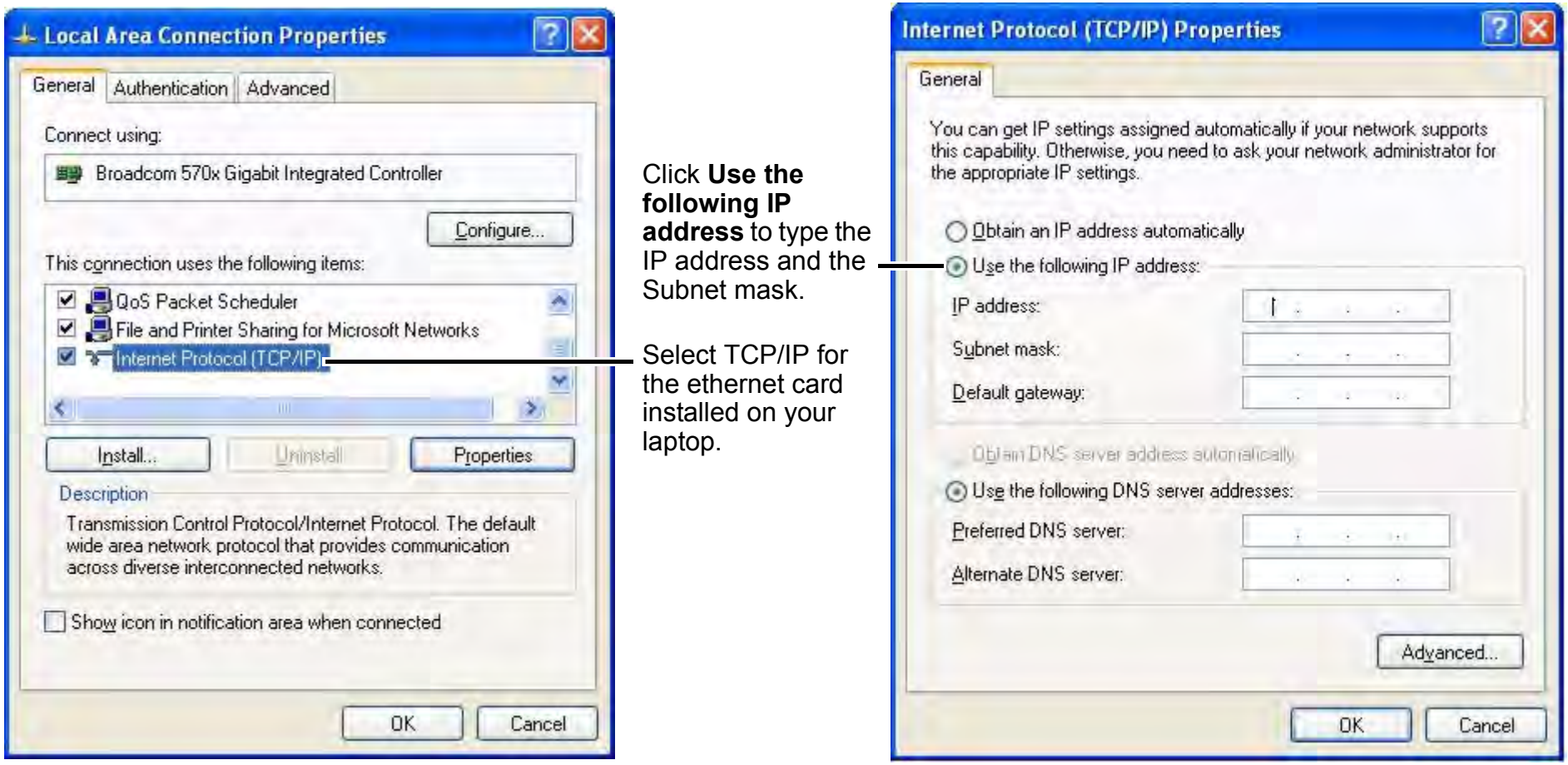

Local Area Connection Properties
General
Authentication
Advanced
Connect using:
Broadcom 570x Gigabit Integrated Controller
Configure...
This connection uses the following items:
QoS Packet Scheduler
File and Printer Sharing for Microsoft Networks
Internet Protocol (TCP/IP)
Install...
Uninstall
Properties
Description
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
Show icon in notification area when connected
OK
Cancel
Click Use the following IP address to type the IP address and the Subnet mask.
Select TCP/IP for the ethernet card installed on your laptop.
Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
Subnet mask:
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

Figure 1 - 35: Setting Laptop IP address for Windows XP

NOTE **Generally Step 5 is not necessary.**

5 Type in the DNS server. Click **OK**. The IP address you just entered appears in the Installed gateways field.

6 Click **OK** at the bottom of the TCP/IP Properties Window to accept all changes and to close the window.

7 Click **OK** at the bottom of the Network window and allow the computer to restart. This completes the Ethernet Setup. Continue on to Network Verification.

Network Verification

Perform the following procedure to test functioning communication between the laptop and the scanner.

Initial Conditions

- The Ethernet cable is connected from the laptop's network card to the hospital's network
- The Mx8000 / Mx8000 IDT/Brilliance host computer must be booted and connected to the network
- Laptop is booted and running normally

Procedure

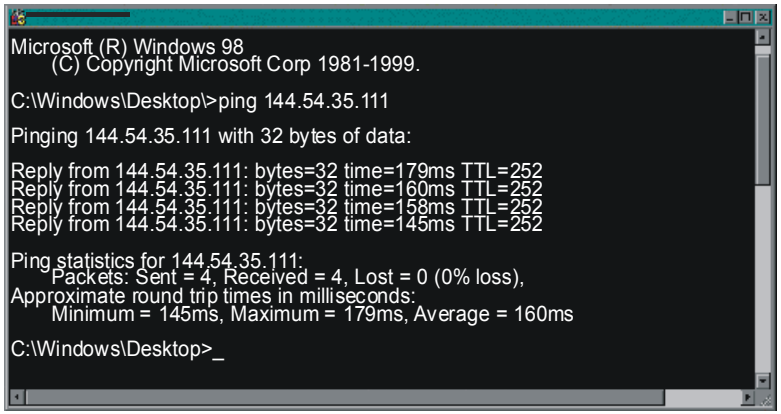
1 Open a DOS window by either one of the following two methods:

a On the taskbar, click the **Start** button, click **Programs** and then select **MS-DOS Prompt** (Windows 98).

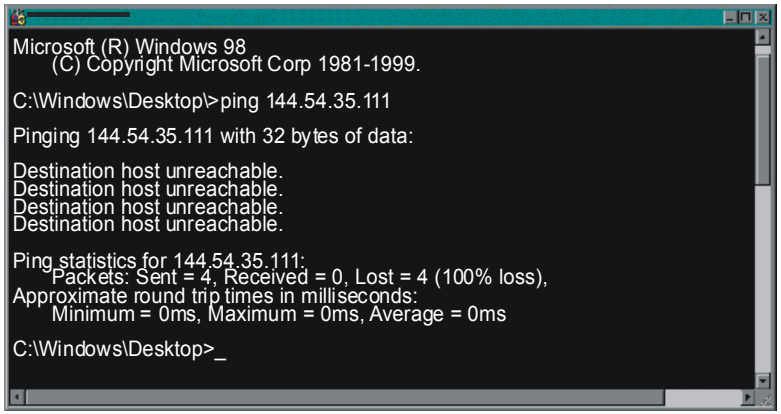
b On the taskbar, click the **Start** button, click **Run** and in the text field type: **command**. Click **OK**.

2 Type: **ping <** Mx8000 / Mx8000 IDT/Brilliance **IP Address>** and press **<Enter>** in the DOS window prompt (see Figure 1 - 36).

NOTE **Mx8000/Mx8000 IDT/Brilliance IP Address> is the numerical IP address of the scanner obtained from the hospital's Network Administrator.**


Microsoft (R) Windows 98
(C) Copyright Microsoft Corp 1981-1999.
C:\Windows\Desktop\>ping 144.54.35.111
Pinging 144.54.35.111 with 32 bytes of data:
Reply from 144.54.35.111: bytes=32 time=179ms TTL=252
Reply from 144.54.35.111: bytes=32 time=160ms TTL=252
Reply from 144.54.35.111: bytes=32 time=158ms TTL=252
Reply from 144.54.35.111: bytes=32 time=145ms TTL=252
Ping statistics for 144.54.35.111:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milliseconds:
Minimum = 145ms, Maximum = 179ms, Average = 160ms
C:\Windows\Desktop>_

Example of a good connection


Microsoft (R) Windows 98
(C) Copyright Microsoft Corp 1981-1999.
C:\Windows\Desktop\>ping 144.54.35.111
Pinging 144.54.35.111 with 32 bytes of data:
Destination host unreachable.
Destination host unreachable.
Destination host unreachable.
Destination host unreachable.
Ping statistics for 144.54.35.111:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
Approximate round trip times in milliseconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\Windows\Desktop>_

Example of a bad connection

Figure 1 - 36: Ping the Scanner

Host Preparation for Appropriate Connections

CANpro 9.0 enables you to connect your laptop with synchronization to all modalities of Mx8000, Mx8000IDT and Brilliance 6, 10 and 16 slices.

- Synchronization is needed only in case the FSE want to performance X-rays scans with the CANpro tool for troubleshooting. If only Gantry telegram monitoring is necessary, the quickest method is just to connect directly to the Gantry (using the CANpro cable connected to the MCU) and to select the default machine in question (Mx8000 or Mx8000IDT&Brilliance).
- The default machines folders for Mx8000 IDT and Brilliance are identical in files type and functionality.

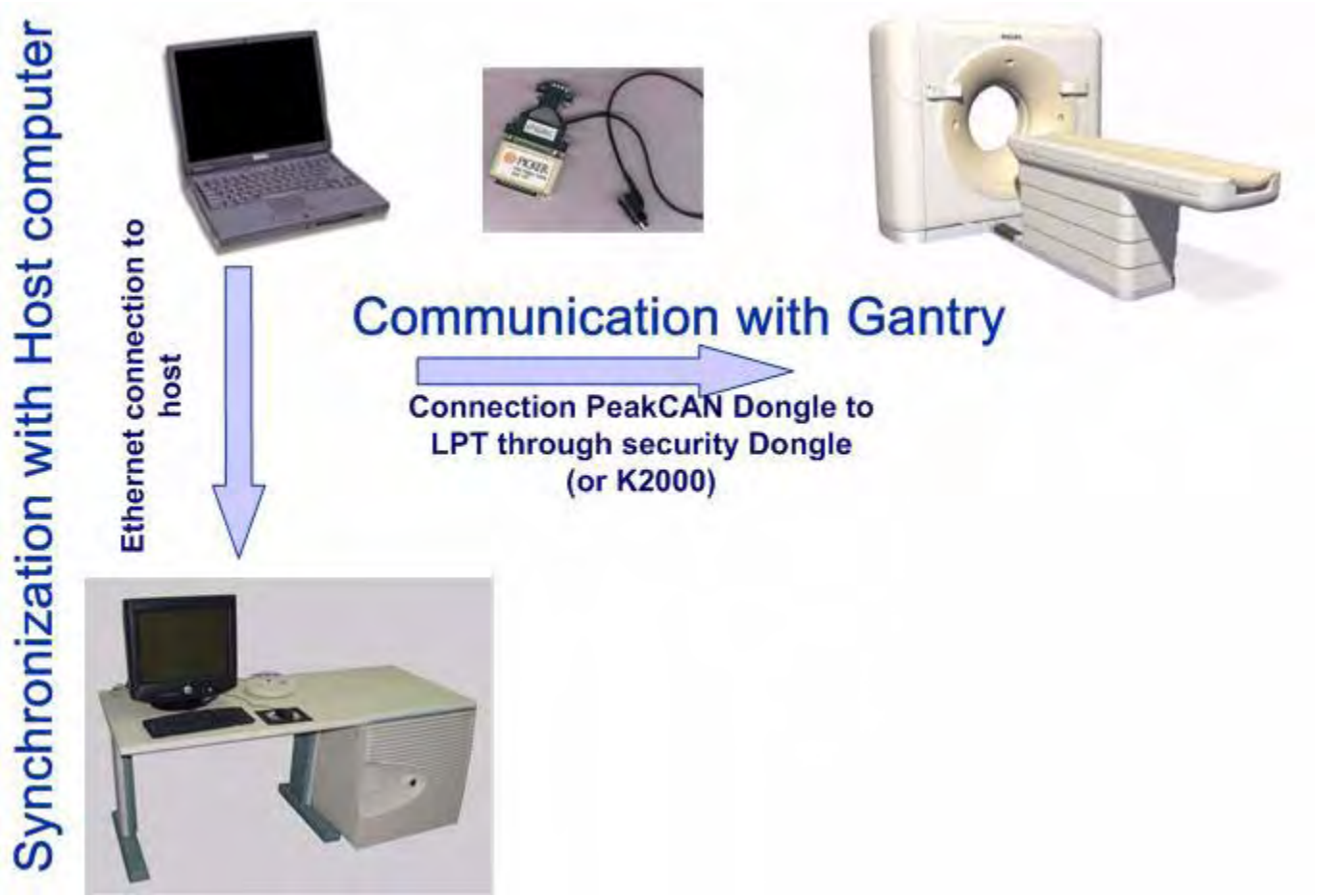

Synchronization with Host computer
Ethernet connection to host
Communication with Gantry
Connection PeakCAN Dongle to LPT through security Dongle (or K2000)

Figure 1 - 37: Synchronization Block Diagram

In order to clarify the dynamic configuration of systems type and versions for the service engineer and avoid conflict between the CANpro 8.1 and CANpro 9.0 user, implement the following procedure when you perform synchronization with the CT scanner.

Synchronization Process

During synchronization, CANpro downloads folders to create a machine identical to the CT Host. Refer to Appendix Diagnostic Program Folder Structure for more information. One of the folders, named **Description**, contains the code of the CANpro version and tables parameters to enable scans identical to the connected CT-scanner. For example if the laptop CANpro is version 8.1 and the description folder is set to CANpro version 9.0, the synchronization process stops and an error message describing the incompatibility appears.

Therefore before we synchronize with the Host, we must verify, and reset, if the description files are compatible.

The synchronization also allows CANpro to ask permission of X-ray ON scenarios pending the temperature of the tube according to the TLC model (Temperature Load Calculator). If the desired sequence will overheat the tube, the scan will be delayed to allow the cooling of the X-ray tube.

Synchronize with Mx8000 Dual and Quad CT- Scanners

The Mx8000 system will be able to synchronize with the new CANpro 9.0 after the “CANpro 9.0 upgrade” CDROM is installed into the CT-Host software (see CANpro 9.0 upgrade in Mx8000 systems section).

The procedure allows the user to select which kind of description files are set to synchronize with the Host: CANpro 9.0 or CANpro 8.1. This upgrade was created to avoid the possibility of the service engineer still using CANpro 8.1 arrives at a site where a previous colleague updated the Host version to work with CANpro 9.0. by enabling the engineer to switch between description files compatible with the CANpro version user (CANpro 8.1 or CANpro 9.0).

Synchronization process

Plan: Synchronize with the Mx8000 system

System: **System Mx8000 (Dual or Quad)**

Host Status: **Version 2.51 or higher and CANpro 9.0 upgrade installed**.

Laptop Status: **CANpro 9.0 or 8.1 version**, Peak CAN dongle installed, cable network for Ethernet link with computer, site cable to Gantry connected to laptop through PeakCAN.

Reference: Record IP address of the CT-host computer (O2).

The synchronization process includes the following steps:

1. Set the description files in the Host CT scanners to be compatible with your CANpro 9.0 or 8.1 version.
2. Connect and verify link between CT Host computer and FSE laptop.
3. Verify CT host is logged on as **mx**.
4. Start synchronization.

NOTE **Step 1 of this procedure is possible only if the CANpro 9.0 upgrade CDROM was installed on system.**

Step1: Set the description files Host CT – CANpro laptop

1. Log on as **root** (password: **pkserv99**).
2. Open new winterm window.
3. Navigate to **/usr/diamond.root/bin** or to **/usr/canpro**.
4. For CANpro 9.0:
   a. Type: **./Set_Canpro_description_V9** and press **<Enter>**.
   b. Wait for message: ..**Set CANpro description V9 is completed**.

or

For CANpro 8.1:

a. Type: **./ Set_Canpro_description_V81** and press **<Enter>**.
b. Wait for message: **..Set CANpro description V81 is completed**.

Step 2: Verify Ethernet link between laptop and O2 computer

1. Connect network cable to hospital network or twisted cable directly to O2 computer (remember to reconnect the network after finish operation).
2. From the laptop, ping the IP address of the O2 host computer as follows:
   a. Click **Start | Run**.
   b. In the Run dialog, type: **command** and click **OK**.
   c. In the command window type: **ping** “IP number” and press **<Enter>** (see Figure 1 - 36 on page 1-33).

Step 3: Log on as user mx

1. Log out from **root** and log on as **mx**.
2. Wait until log on is completed.

Step 4: Start synchronization

1 Run CANpro.

2 Type the selected “machine name” and check synchronization machine description from SGI Host/ Console.

3 Click **Connect**.

4 Type IP Address in the Console IP address dialog box opens (see Figure 1 - 38).

5 Select the **Mx8000** machine type. Click **OK**.

Figure 1 - 38:

CAUTION **DO NOT EVER CHANGE THE PORT NUMBER!**

If this is the first time the laptop is connected to the machine, it will take a few minutes to download all files to the laptop, then the **Create a protocol file** dialog box appears.

If this is the second time to the same name machine, it will take around 30 seconds to compare all files between host and CANpro.

Also notice that if the compare function find files not compatible, the faster way to proceed is to create a new machine with new name and connect as if it is a first time connection. For example, if firmware was changed or reinstalled to the Gantry without synchronization between the first time connection to the system and the present, the machine will detect that the gantry_hardware_firmware.cfg file differs from the downloaded file.

NOTE **CANpro 9.0 upgrade CDROM is only valid for Mx8000 systems. For Brilliance CT and Mx8000 IDT family see the next section. Once the script is installed into the Mx8000 system Host software there is no need to reinstall it every time you synchronize with CANpro, unless you performance a software installation from scratch in the O2 Host computer.**

Synchronize with Mx8000 IDT and Brilliance 16, 10, 6-slice Configuration CT Scanners

CANpro 9.0 is compatible with Mx8000 IDT systems 3.1 or higher and Brilliance 6, 10, 16 slices version 1.1 or higher.

In the Mx8000 IDT and Brilliance CT modality the default description in the above versions is compatible with CANpro 9.0. During installation of CT Host software versions 3.1 or 1.1 respectively, the description is manually set to CANpro 8.1 (by procedure) to avoid errors during synchronization until CANpro 9.0 is practically available for all FSE worldwide.

In order to synchronize between the CANpro 9.0 and the Host computer manually update the description files by the following procedure.

NOTE **To synchronize CANpro with Mx8000 IDT or Brilliance systems, log on as mxservice ONLY! CANpro 9.0 is functional with TLC corrections from Host. Therefore, DO NOT OPEN the CANPRO ENABLER window for Dummy TLC as in V8.1. There is no need for this feature if you work with CANpro 9.0. The Dummy TLC is only valid for previous version of CANpro 8.1.**

Set Descriptions Files CT Host—Laptop

1. Log on as **mxservice** (password **service_only**).
2. Wait until log on is completed.
3. Note the CANpro version displayed in the **Help | Product Information** window.

Figure 1 - 39:

NOTE **Notice that the parameters under this windows actually update after logging on as mxservice twice since the last change.**

4. Click **Start | Run**.
5. In the **Run** dialog, type: **C:\usr\canpro\switch_description.bat** and click **OK**.

The following windows appears:

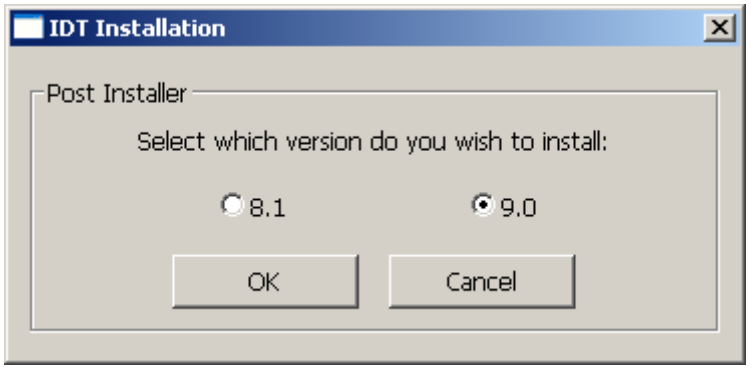


Figure 1 - 40:

6 Select the CANpro version you work with 8.1 or 9.0 (in the example in Figure 1 - 40, V9.0 is selected). Click **OK**. If your previous set was CANpro 8.1, the message in Figure 1 - 41 appears.

A command window runs in the background when the script running and then closes after the procedure is completed.

In case, you try to change to version 9.0 and the previous set was also CANpro 9.0 descriptions, the message in Figure 1 - 42 appears.

Figure 1 - 41:

Figure 1 - 42:

Synchronization Process—CANpro 9.0

Plan: Synchronize with the Mx8000 IDT (Brilliance) system

System: **System Mx8000 IDT (Brilliance)**

Host Status: **Version 3.1 or higher (1.1 or higher)**

Laptop Status: **CANpro 9.0**, Peak CAN dongle installed, cable network for Ethernet link with computer, site cable to Gantry connected to laptop through PeakCAN and service key dongle or K2000 Visa.

Reference: Record IP address of the CT-host computer.

The synchronization process includes the following steps:

1 Set the description files in the host CT scanners to be compatible with your CANpro 9.0. (see Set Descriptions Files CT Host—Laptop).

2 Check version under **Help | Product Information**.

3 Connect and verify link between CT Host computer and FSE laptop.

4 Verify that the CT host is logged on as **mxservice**.

5 Activate ftp server by clicking **Start | Programs | Cesar FTP**.

6 Start synchronization.

7 Run CANpro.

8 Type the selected “machine name” and check synchronization machine description from Host.

9 Click **Connect**.

10 In the Console IP address dialog box, type the IP Address.

11 Select the **Mx8000IDT&Brilliance** machine type. Click **OK**.

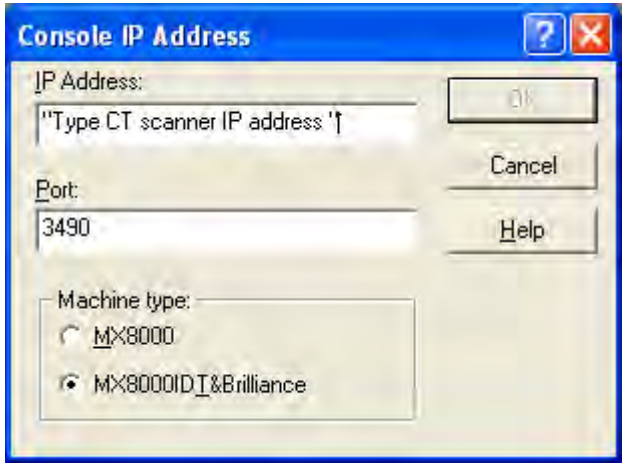


Figure 1 - 43:

CANpro 9.0 Hardware Peak CAN USB Dongle Support

CANpro version 9.0 also supports the Peak CAN USB hardware dongle (see Figure 1 - 44). This feature will cover future laptop design that does not include a D-type 25 pin parallel port.

The Peak CAN USB dongle is connected to the USB port in the laptop (or computer) from one side and to the Gantry CAN cable on the other side by the familiar CAN connector D-type 9 pin. This interface take the VCC power directly from the USB connector and no other connections are needed.

The driver set up is done by the CAN hardware icon by selecting USB option.

Figure 1 - 44: Peak CAN USB Dongle

Switching Between Hardware Peak CAN Parallel and Peak CAN USB.

To enable work with CANpro 9.0 with the Peak CAN USB do the following:

1 Turn on the computer and wait until the application starts up.

NOTE **With certain laptops there is a possibility of non-recognition of the USB driver upon system startup. Therefore, the system should be running before you proceed to the next step.**

2 Connect the Peak CAN USB dongle to one of the USB port in the laptop.

3 After booting click select **Start | Settings | Control Panel**. Double-click the CAN hardware icon.

4 Select the **USB** option under the properties page (see Figure 1 - 45).

5 Click **Apply** and **OK**.

6 Log on to CANpro and verify the CAN driver is recognized by the software by selecting **Help | About CANpro**.

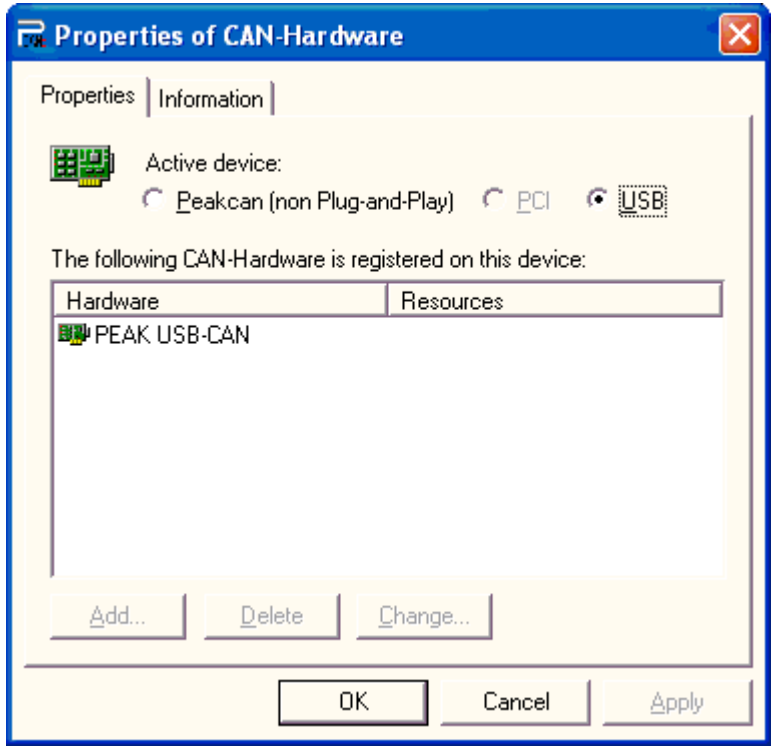


Figure 1 - 45:

NOTE **Important! The CANpro Version 9.0 kit does not include the hardware PEAK CAN USB DONGLE INTERFACE.**
Hardware items should be order separately.
The USB Dongle is not mandatory if the field engineer already has the parallel PEAK CAN DONGLE, since CANpro 9.0 supports both hardware interfaces (Parallel and USB connections).

Specifications for Connecting to the Scanner for the First Time

Table 1 - 1:

System	Version	Prerequisites	TLC Support
Mx8000 (Quad and Dual	2.51 or higher	V9 Description CD-ROM installed on Host computer	Yes
Mx8000 IDT 16/10	3.1 or higher	N/A	Yes
Brilliance CT 16/10/6	1.1 or higher	N/A	Yes

Troubleshooting Tips

1. If a file transfer stops before it has completed a synchronized download, check to see if CYBER ARMOR is running.

   To stop the CYBER ARMOR process:

   a. Press **Ctrl-Alt-Delete** and click **Task Manager**.

   b. Select the **CYBER ARMOR** process.

   c. Click **End**.

2. Verify the dongle is installed and its RED LED is on.
3. At least 50MB of free space on your laptop.
4. Select a “new” name for the Machine Name.

   To remove “old” machine name:

   a. Start CANpro.

   b. Select the menu **Monitor | Stop**.

   c. Select the tab **Options.**

   d. Click **Remove Machine**. Highlight “old” name on list. Click **OK**.

NOTE **You cannot remove the machine name that you are currently logged into.**

Canpro V9 Description Installation Instructions for Mx8000 Systems

Introduction

The Canpro Descriptions V9 can be installed over any Mx8000 model V2.51 or higher.
This version adds the Canpro V9 description to the Canpro Description V8.1.
This installation contains two scripts that set which Canpro description is active.

How to Install this Version

1. Log on as **root** (password: **pkserv99**).
2. Insert the **CANpro V9.0 Description for Mx8000** CD to the O2 CD-ROM drive.
3. Open new "**winterm"** and navigate to the CD-ROM drive.
4. Type "**./Install**" and press **<Enter>**.
5. The install script runs. Follow the instructions on screen (see Figure A - 1).

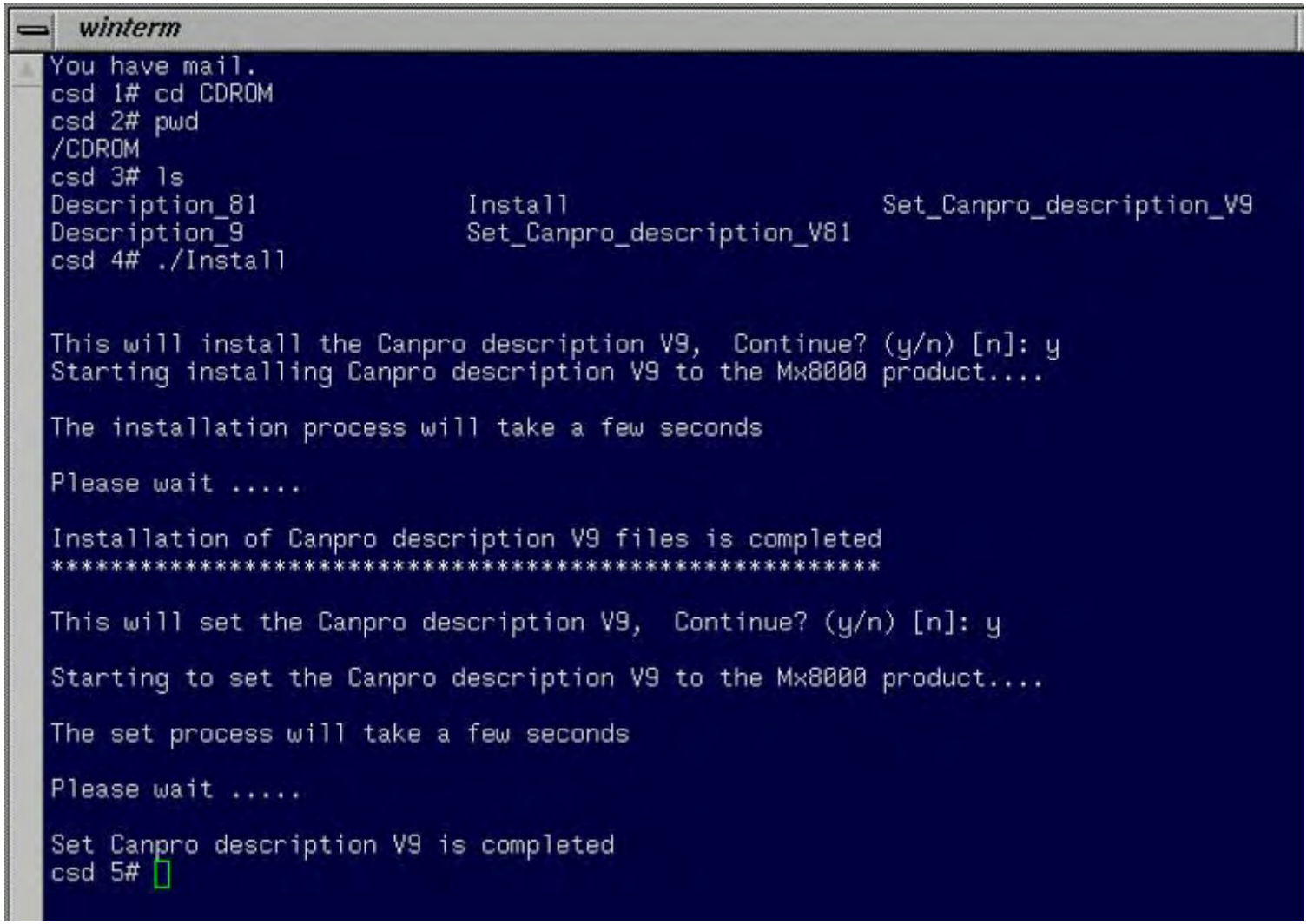

winterm
You have mail.
csd 1# cd CDROM
csd 2# pwd
/CDROM
csd 3# ls
Description_81 Install Set_Canpro_description_V9
Description_9 Set_Canpro_description_V81
csd 4# ./Install
This will install the Canpro description V9, Continue? (y/n) [n]: y
Starting installing Canpro description V9 to the Mx8000 product....
The installation process will take a few seconds
Please wait .....
Installation of Canpro description V9 files is completed
****
This will set the Canpro description V9, Continue? (y/n) [n]: y
Starting to set the Canpro description V9 to the Mx8000 product....
The set process will take a few seconds
Please wait .....
Set Canpro description V9 is completed
csd 5#

Figure A - 1:

6 Eject the **CANpro V9.0 Description for Mx8000** CD.

How to Set the Canpro Description

1 Log on as **root** (password: **pkserv99**).

1 Open a new winterm window.

2 Navigate to **“>/usr/diamod.root/bin”** or to “**>/usr/Canpro**”.

3 Press on the “**./Set_Canpro_description_V81**” to toggle to Canpro description V81.

4 Press on the “**./Set_Canpro_description_V9**” to toggle to Canpro description V9.

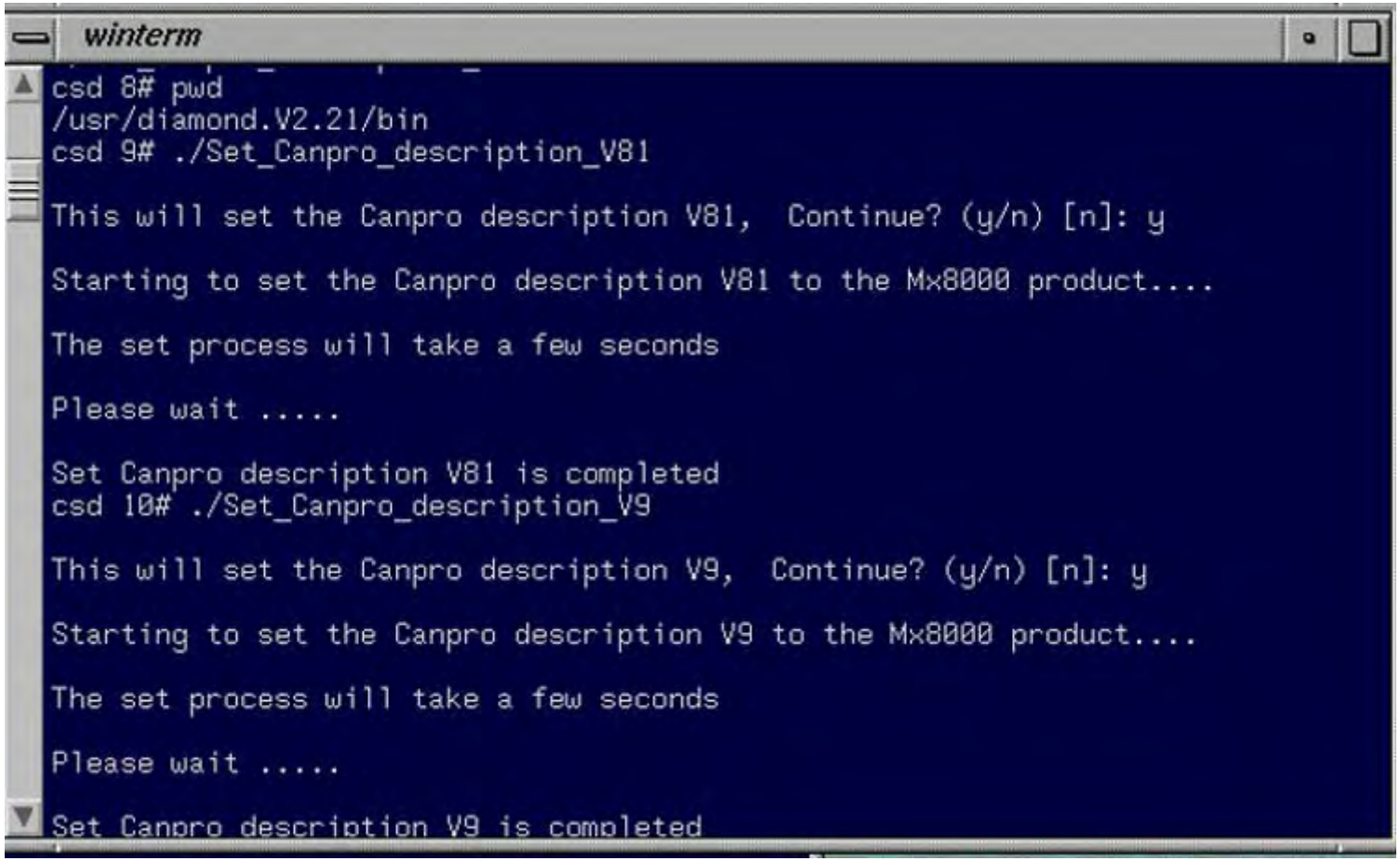

winterm
csd 8# pwd
/usr/diamond.V2.21/bin
csd 9# ./Set_Canpro_description_V81
This will set the Canpro description V81, Continue? (y/n) [n]: y
Starting to set the Canpro description V81 to the Mx8000 product....
The set process will take a few seconds
Please wait .....
Set Canpro description V81 is completed
csd 10# ./Set_Canpro_description_V9
This will set the Canpro description V9, Continue? (y/n) [n]: y
Starting to set the Canpro description V9 to the Mx8000 product....
The set process will take a few seconds
Please wait .....
Set Canpro description V9 is completed

Figure A - 2:

To check the description file status by comparison with your CANpro file description, while logged on as **mx**, proceed as follows:

1. Open a service terminal.
2. Change directory to **usr/canpro**.
3. Type: cd /usr/canpro and press **<Enter>**.
4. Type: **diff –r description Description_9** and press **<Enter>**
   or,
   type: **diff –r description Description_81** and press **<Enter>**

If files are not the same, the different files are displayed. If the folder is equal, the next line prompt appears without any details.

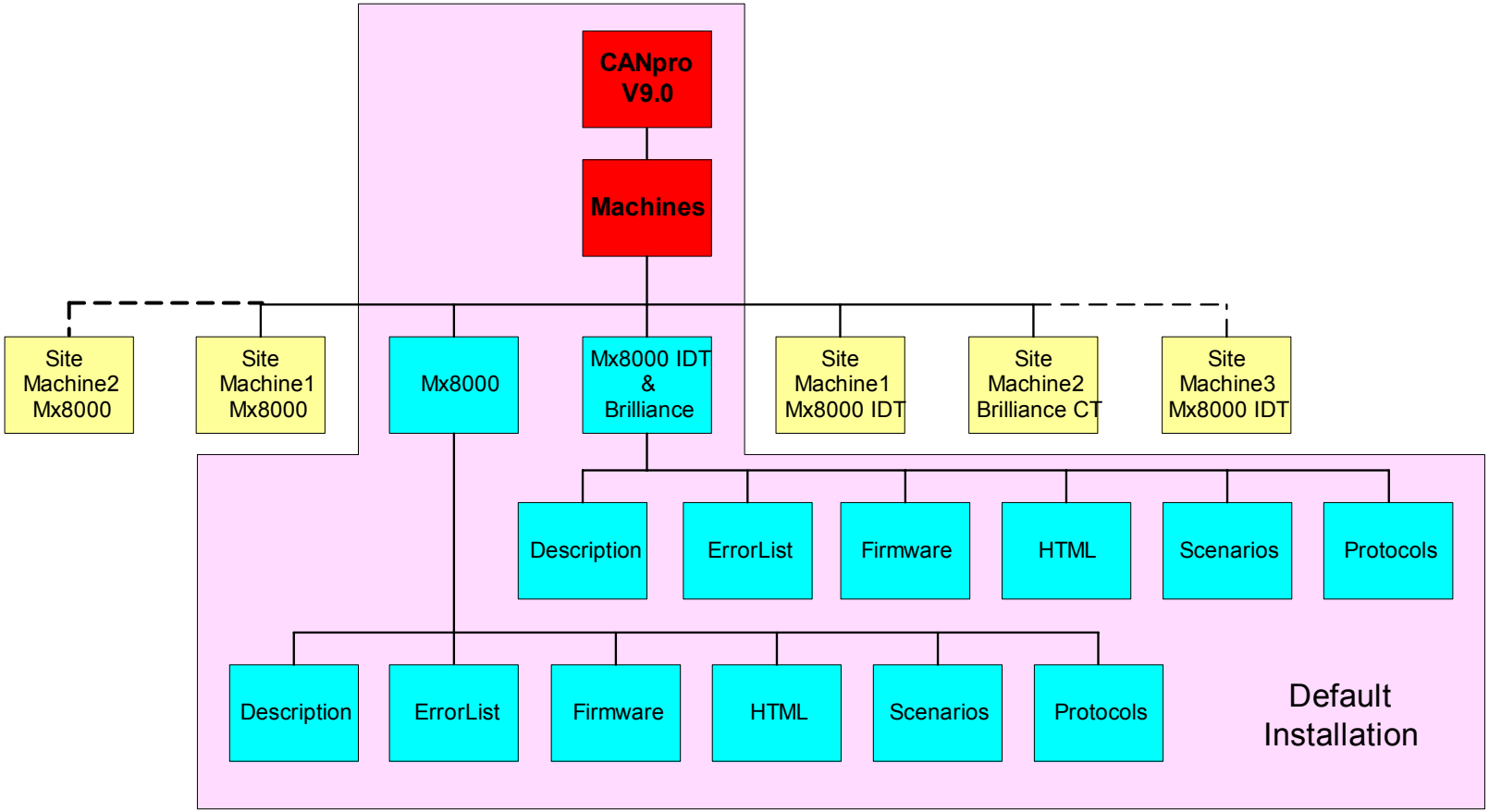
Figure A - 3: Example—Description files are identical to CANpro 9.0

To change the CANpro file description, log out and log on as **root** and change the description again.

Log on again as **mx** (user **mx** does not have permission to overwrite files).

Diagnostic Program Folder Structure

The folders for the Mx8000 and the Mx8000 IDT diagnostic program are organized as shown in Figure B - 1. The following sections describe the contents of the sub-folders in the Mx8000 IDT.



Blue = Default folder after installing CANpro V9.0

Yellow = Added by user during download from Host CT machine

Figure B - 1:

Folders Downloaded from Site

The following folders (see Figure B - 2) are created during synchronization with the host CT computer:

- **HTML folder** contains solutions for errors reported by the scanner
- **Protocols folder** contains CANpro log files created while monitoring the Gantry.
- **Description folder** contains description files for the CANpro program
- **Firmware folder** contains the list of hardware firmware versions that are installed in the machine. To update firmware refer to the CANpro Tool User's Guide.
- **Scenarios folder** contains three sub-folders; Adjust, Diag, and Init

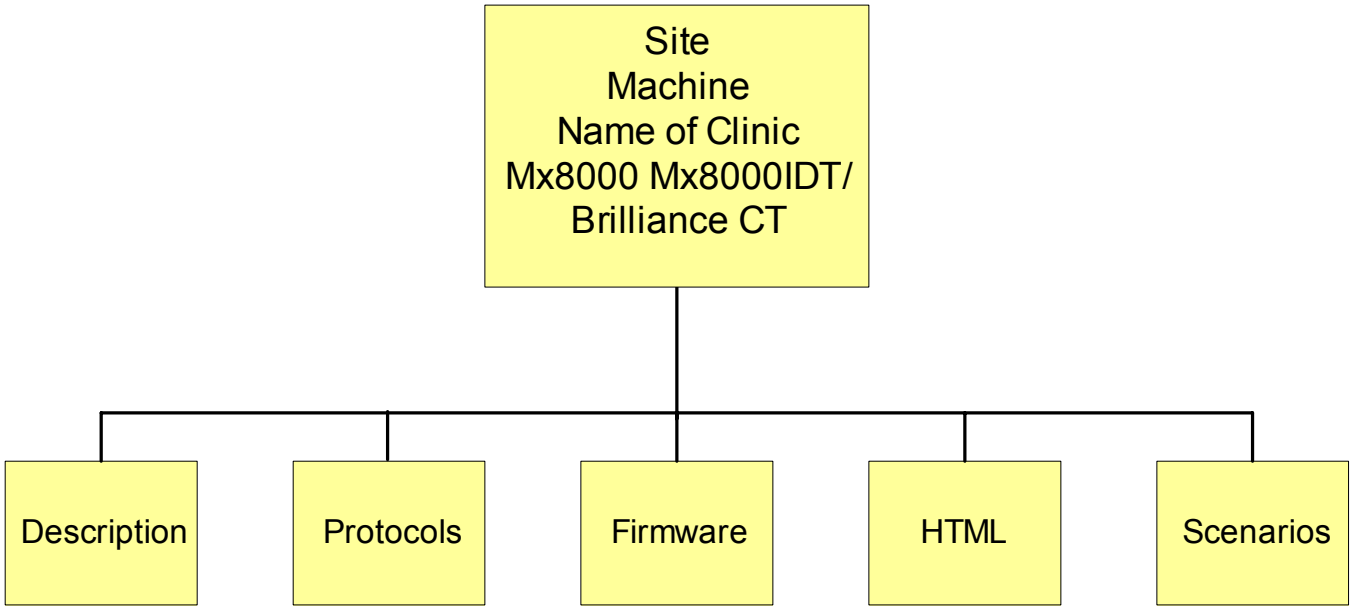


Figure B - 2: Folders Downloaded from Site Diagram

Scenarios Folder for Mx8000 IDT and Brilliance CT Systems

NOTE **The Scenario for Mx8000 is similar to the following description but not identical.**

The Scenarios folder contains the following three sub-folders (see Figure B - 3):

- **Adjust folder** contains calibrations sequences such as frequency adaptation, tube conditioning, etc.
- **Diag folder** contains special sequences such as surview, spiral, and XRS tests
- **Init folder** contains files to bring the scanner to the standby state, including system tables and a scenario to load them

For troubleshooting in CANpro 9.0, new X-ray scenarios can be defined with the Manual X-ray tool (see CANpro Tool User's Guide).

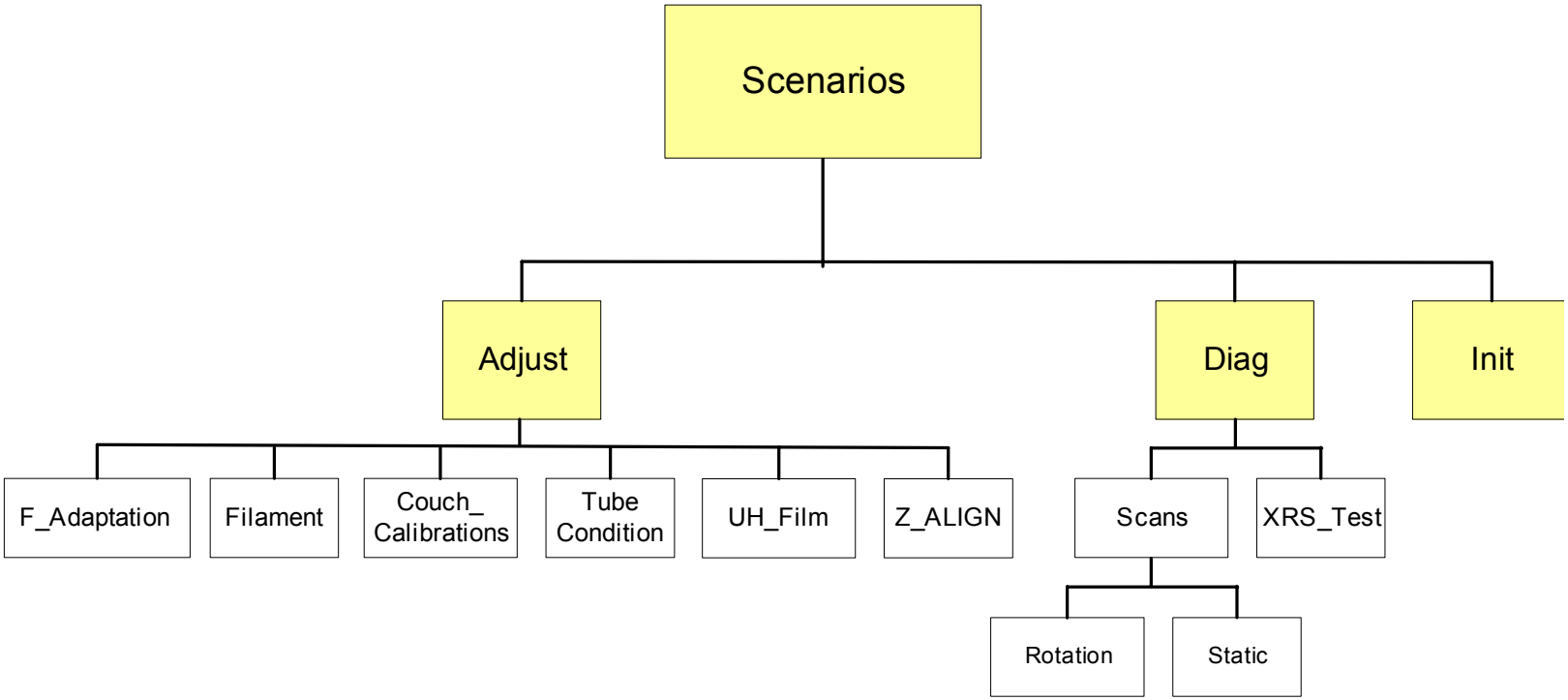


Figure B - 3: Scenario Folder Structure

List of Scenarios

The following tables lists the scenarios in the scenario folder:

Table B - 1: List of Scenarios

Scenarios Folder		Files	Description
Adjust	F_Adaptation	f_adapt.tsc	Performs frequency adjustment for XRS. Static scan with X- rays
	Filament	see Table B - 2	
	Couch_ Calibrations	pth_adj_new.tsc	Performs horizontal couch adjustment, and writes results to PTH MCB Flash Memory
		ptv_adj_new.tsc	Performs vertical couch adjustment, and writes results to PTV MCB Flash Memory
	Tube Condition	ltc_seq1.tsc	Part of the long tube conditioning procedure
		ltc_seq5.tsc	Part of the long tube conditioning procedure
		ltc_run.tsc	This is a master scenario that calls ltc_seq1.tsc and ltc_seq5.tsc to perform the scans. Required IRS log 0ut/In (ACQ_OK). Available from version 2.0B2
	UH_Film	uhfilm75.tsc	Film for ultra-high collimator
	Z-ALIGN	bp_zcal1.tsc	Static scan with a small opening of the upper beam at 120 kV and 100 ma for 3 sec a-plane = 0.1 mm
		bp_zcal2.tsc	Static scan with a big opening of the upper beam at 100 kV and 100 ma for 0.5 sec a-plane = 10.5 mm

Table B - 1: List of Scenarios

Scenarios Folder		Files	Description
Diag		Get_All_firmware_versions.tsc	Send telegram to each controller allowing reception of all firmware versions at once in real time. In the protocol log, double-click the 00 sequence line of each controller to obtain the version.
	Scans/ Rotation	see Table B - 3	
	Scans/ Static		
	XRS_Test	s_hvtest.tsc	Test the HV transformer with dummy plugs instead of a tube.
		single_p.tsc	Troubleshooting scenario to test the inverter. When it causes a pulse at the start_inverter signal. Use a scope. S-Hvtest.tsc diagnostic scenario to measure the Inverter_load signal
		Sta_hvt.tsc	filament = off, X-ray = on; 140 kV / 1 mA /10 s
		Rot_hvt.tsc	filament = off, X-ray = on; rot:0.5 sec 140 kV / 1 mA /10 s
Init		Init_to_Standby.tsc	Scenario to load system tables to gantry and bring scanner to standby state

Table B - 2: List of Filament Scenarios

Scenarios Folder		Files	Description	XRS
Adjust	Filament	L90tc_25.tsc	LFS tube current-getter mode	90kV / 250mA / 2x0.5s
		LFtc_30.tsc	LFS tube current-getter mode	120kV / 30mA / 2x0.5s
		LFtc_50.tsc	LFS tube current-getter mode	120kV / 50mA / 2x0.5s
		LFtc_100.tsc	LFS tube current-getter mode	120kV / 100mA / 2x0.5s
		LFtc_150.tsc	LFS tube current-getter mode	120kV / 150mA / 2x0.5s
		LFtc_200.tsc	LFS tube current-getter mode	120kV / 200mA / 2x0.5s
		LFtc_250.tsc	LFS tube current-getter mode	120kV / 250mA / 2x0.5s
		LFtc_300.tsc	LFS tube current-getter mode	120kV / 300mA / 2x0.5s
		LFtc_400.tsc	LFS tube current-getter mode	120kV / 400mA / 2x0.5s
		LFtc_500.tsc	LFS tube current-getter mode	120kV / 500mA / 2x0.5s
		L14tc_25.tsc	LFS tube current-getter mode	140kV / 250mA / 2x0.5s
		S90tc_15.tsc	SFS tube current-getter mode	90kV / 150mA / 2x0.5s
		sFtc_30.tsc	SFS tube current-getter mode	120kV / 30mA / 2x0.5s
		sFtc_50.tsc	SFS tube current-getter mode	120kV / 50mA / 2x0.5s
		sFtc_100.tsc	SFS tube current-getter mode	120kV / 100mA / 2x0.5s
		sFtc_150.tsc	SFS tube current-getter mode	120kV / 150mA / 2x0.5s
		sFtc_200.tsc	SFS tube current-getter mode	120kV / 200mA / 2x0.5s
		sFtc_250.tsc	SFS tube current-getter mode	120kV / 250mA / 2x0.5s
		sFtc_300.tsc	SFS tube current-getter mode	120kV / 300mA / 2x0.5s
		S14tc_25.tsc	SFS tube current-getter mode	140kV / 250mA / 2x0.5s

Table B - 3: List of Scan Scenarios

Scenarios Folder		Files	Description	XRS
Diag	Scans/ Rotation	mu075030.tsc	normal density, rot: 0.75 sec	120kV / 30mA / 6s
		mu075050.tsc	normal density, rot: 0.75 sec	120kV / 50mA / 6s
		mu075100.tsc	normal density, rot: 0.75 sec	120kV / 100mA / 6s
		mu075150.tsc	normal density, rot: 0.75 sec	120kV / 150mA / 6s
		mu075200.tsc	normal density, rot: 0.75 sec	120kV / 200mA / 6s
		mu075250.tsc	normal density, rot: 0.75 sec	120kV / 250mA / 6s
		mu075nxr.tsc	normal density, rot: 0.75 sec	W/O X ray / 6s
		*R_spiral.tsc	Spiral - out, 310 m"m, 0.75sec	120kV / 50mA /16s
		rot42.tsc	rotation speed 0.75 Sec	120kV / 300mA /1.5s
	Scans/ Static	surview.tsc	Surview (Pilot)-90 DEG	120kV / 150mA /13s
		*S_spiral.tsc	Spiral out -310mm	120kV / 50mA /16s
		ST100_6S.tsc	normal density	120kV / 100mA / 6s
		ST250_6S.tsc	normal density	120kV / 250mA / 6s

*Reboot IRS in case of failure.

USB to PS2 Adapter for CT Service Laptops

Until today service laptops were connected directly to the CANpro Tool Peak dongle through the PS2 and Parallel ports. Implementing the CANpro Tool in a new laptop without a PS2 connector requires a PS2 to USB adapter.

This section details the adapter specifications and setup and presents an example of an approved and tested adapter.

Overview

The new service laptop are not supplied with a PS2 connector. This is due to the new trend to supply the newer and faster USB (Universal serial board) connector. Example: DELL D600 Laptop.

For CT-service engineers the diagnostic tool CANpro Peak dongle, requires a PS2 connector.

As a workaround we suggest acquiring a USB to PS2 adapter.

Figure 1 displays a tested PS2 to USB adapter that was determined compatible with the Gantry CANpro and CT service laptop interface connections.

Figure 1: ATEN UC-100KMA Adapter

Specifications

The following are the specifications of the adapter tested:

- PS/2 Keyboard & Mouse to USB adapter
- Two Female PS2 Device (keyboard and Mouse) connectors
- USB 1.1 Spec. compliant
- Supports PC windows 98/98SE/2000/ME/XP
- Model: UC-100KMA
- Manufactured by ATEN

NOTE **For more specifications go to www.aten.com and search for the adapter model UC-100KMA,**

Set Up Connections

Figure 2 below illustrates the correct set up for the USB/PS2 adapter.

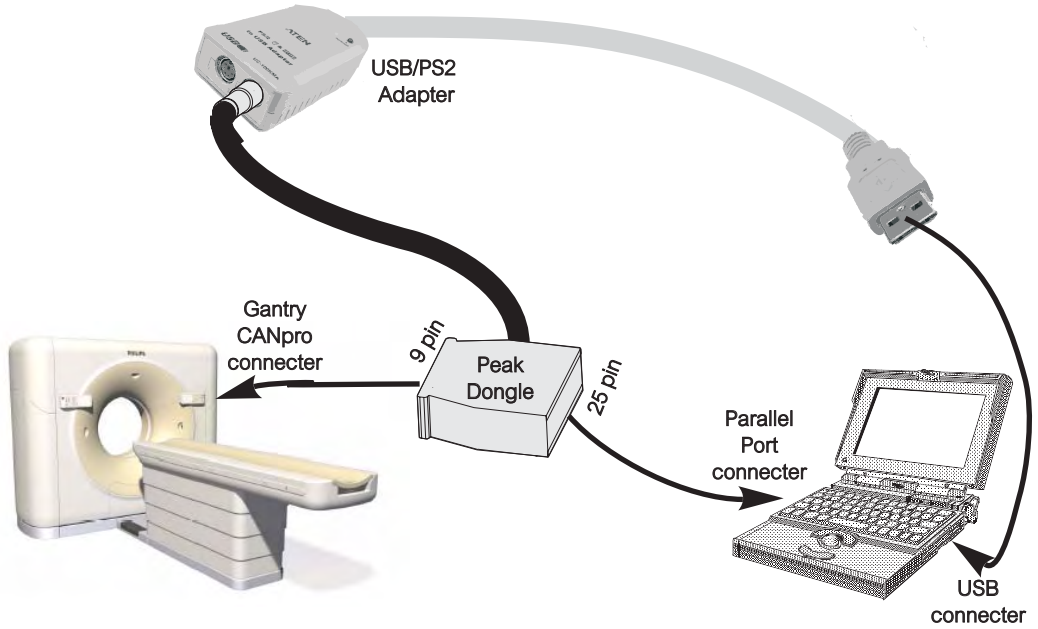


Figure 2: USB to PS2 Adapter Setup

Uninstalling CANpro Secure 4.8 Diagnostic Software

This section instructs the user how to remove the old CANpro software. The CAN driver used by the older software conflicts with the newer driver and must be removed.

NOTE **If you are unsure of the history of your PC and do not know if the 16-bit version of CANpro has ever been installed Perform steps9 and 10 below.**

Initial Conditions

- The PC is up and running
- A CD-ROM drive is installed

NOTE **Since drives are labeled differently on various systems, this document will refer to the letter designation associated with the CD-ROM drive simply as CD-ROM:\.**

Procedure

1. Boot up the laptop computer with CANpro 4.8 Secure software installed.
2. Insert the CANpro Test Tool CD into the CD-ROM drive.
3. In Windows Explorer, open **C:\Windows\System**.
4. Right-click the file Peakcanl.386 and select **Properties**.
5. Verify that the **Read-only** option is disabled. If **Read-only** is enabled, click to clear it. Click **Archive** to enable the Archive option attribute.
6. Click **Apply** and then **OK** to accept the settings and close the dialog box.
7. In Windows Explorer, open **CD-ROM:\Tools\CANpro4.8.Uninstaller** and double-click **CANpro 4.8.Uninstaller.exe**.
8. Click **Uninstall** and then **OK**. The program automatically removes files installed during CANpro 4.8 setup.
9. In Windows Explorer, open **CD-ROM:\Tools\CANproCleaner** and double-click **CANproCleaner.exe**.

NOTE **If a user profile for more than one user exists on the PC, every user with a profile that invokes CANpro must run CanproCleaner.exe to remove all registry entries for CANpro.**

10 Make sure the check boxes for both options (clean current user info and clean general info) are checked. Click **OK**. The program automatically removes registry entries associated with CANpro 4.8 installation.

11 Save any files in the C:\Mx8000 folder to a different folder.

12 In Windows Explorer, select the Mx8000 folder to highlight the folder and click **Delete**.

13 Click **Yes** to remove the folder Mx8000 and move all its contents to the recycle bin. CANpro Secure 4.8 software is now completely removed from the PC.

14 Restart the PC. Enter Setup during the PC's boot process to prepare for the next step.